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## HIPPOCRATES

VOL. I

# HIPPOCRATES

WITH AN ENGLISH TRANSLATION BY

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## PREFACE

THE works, some seventy in all, which in any of our manuscripts are assigned to Hippocrates, comprise what is called the "Hippocratic collection." During nearly three centuries there appeared many editions, of some or of all of these works, intended to instruct medical students or practitioners. The birth of modern medical science in the nineteenth century stopped finally this long series, but a few scholars still worked at the treatises from an historical standpoint. The literary merit, however, of the Hippocratic writings, at least of the majority, is not great, and it is only within the last few years that they have been subjected to the exact scholarship which has thrown such a flood of new light upon most of the classical authors. Even now very little has been done for text, dialect, grammar and style, although the realization of the value of the collection for the history of philosophy is rapidly improving matters. So for the present a translator must also be, in part, an editor. He has no scholarly tradition behind him upon which to build, but must lay his own foundations.

It will be many years before the task is finished, but in the meanwhile there is work for less ambitious students. My own endeavour has been to make as clear and accurate a translation as the condition of

## PREFACE

the text permits, introducing as few novelties of my own as possible, and to add such comment as may bring out the permanent value of the various treatises. They are no longer useful as text-books, but all of us, whether medical or lay, may learn a lesson from the devotion to truth which marked the school of Cos, and from the blunders committed by theorizers who sought a short cut to knowledge without the labour of patient observation and careful experiment.

The present volume has been in preparation since 1910, and the actual writing has occupied all my leisure for the past three years. The time would have been longer, had it not been for the great kindness of Dr. E. T. Withington, whose name will probably appear on the title-page of one of the succeeding volumes.

My thanks are also due to the Rev. H. J. Chaytor for his helpful criticisms.

W. H. S. JONES.

# CONTENTS

	PAGE
PREFACE . . . . .	v
GENERAL INTRODUCTION . . . . .	ix
ANCIENT MEDICINE . . . . .	1
AIRS WATERS PLACES . . . . .	65
EPIDEMICS I AND III . . . . .	139
THE OATH . . . . .	289
PRECEPTS . . . . .	303
NUTRIMENT . . . . .	333

## GENERAL INTRODUCTION

### § 1. GREEK MEDICINE AND "HIPPOCRATES."

WE have learned to associate, almost by instinct, the science of medicine with bacteria, with chemistry, with clinical thermometers, disinfectants, and all the apparatus of careful nursing. All such associations, if we wish even dimly to appreciate the work of Hippocrates and of his predecessors, we must endeavour to break; we must unthink the greater part of those habits of thought which education has made second nature. The Greek knew that there were certain collections of morbid phenomena which he called diseases; that these diseases normally ran a certain course; that their origin was not unconnected with geographical and atmospheric environment; that the patient, in order to recover his health, must modify his ordinary mode of living. Beyond this he knew, and could know, nothing, and was compelled to fill up the blanks in his knowledge by having recourse to conjecture and hypothesis. In doing so he was obeying a human instinct which assures us that progress requires the use of stop-gaps where complete and accurate knowledge is unattainable, and that a working hypothesis, although wrong, is better than no hypothesis at all. System, an organized scheme, is of greater value than chaos. Yet however healthy such an instinct may be, it has



## GENERAL INTRODUCTION

added considerably to the difficulties of the historian in his attempts so to reconstruct the past as to make it intelligible to modern readers.

✓ Primitive man regards everything he cannot explain as the work of a god. To him the abnormal, the unusual, is divine. The uncharted region of mysterious phenomena is the peculiar realm of supernatural forces. "It is the work of heaven" is a sufficient answer when the human intelligence can give no satisfactory explanation.

✓ The fifth century B.C. witnessed the supreme effort of the Greeks to cast aside this incubus in all spheres of thought. They came to realize that to attribute an event to the action of a god leaves us just where we were, and that to call normal phenomena natural and abnormal divine is to introduce an unscientific dualism, in that what is divine (because mysterious) in one generation may be natural (because understood) in the next, while, on the other hand, however fully we may understand a phenomenon, there must always be a mysterious and unexplained element in it. All phenomena are equally divine and equally natural.

But this realization did not come all at once, and in the science of medicine it was peculiarly slow. There is something arresting in the spread of an epidemic and in the onset of epilepsy or of a pernicious fever. It is hard for most minds, even scientific minds, not to see the working of a god in them. On the other hand, the efficacy of human means to relieve pain is so obvious that even in Homer, our first literary authority for Greek medicine, rational treatment is fully recognized.

As the divine origin of disease was gradually

## GENERAL INTRODUCTION

discarded, another element, equally disturbing, and equally opposed to the progress of scientific medicine, asserted itself. Philosophy superseded religion. Greek philosophy sought for uniformity in the multiplicity of phenomena, and the desire to find this uniformity led to guesswork and to neglect of fact in the attempt to frame a comprehensive theory.

The same impulse which made Thales declare that all things are water led the writer of a treatise<sup>1</sup> in the Hippocratic *Corpus* to maintain that all diseases are caused by air. As Daremberg<sup>2</sup> says, "the philosophers tried to explain nature while shutting their eyes." The first philosophers to take a serious interest in medicine were the Pythagoreans. Alcmaeon<sup>3</sup> of Croton, although perhaps not strictly a Pythagorean, was closely connected with the sect, and appears to have exercised considerable influence upon the Hippocratic school. The founder of empirical psychology and a student of astronomy, he held that health consists of a state of balance between certain "opposites," and disease an undue preponderance of one of them.<sup>4</sup> Philolaus, who flourished about 440 B.C., held that bile, blood, and phlegm were the causes of disease. In this case we have a Pythagorean philosopher who tried to include medical

<sup>1</sup> The *περὶ φύσων*.

<sup>2</sup> *Histoire des sciences médicales*, p. 82.

<sup>3</sup> A young man in the old age of Pythagoras. See Aristotle *Meta.* A 986 a 30. Alcmaeon was more interested in medicine than in philosophy, but does not seem to have been a "general practitioner."

<sup>4</sup> Ἀλκμαίων τῆς μὲν ὑγείας εἶναι συνεκτικὴν τὴν ἰσονομίαν τῶν δυνάμεων, ὑγροῦ, ξηροῦ, ψυχροῦ, θερμοῦ, πικροῦ, γλυκεῖος, καὶ τῶν λοιπῶν, τὴν δ' ἐν αὐτοῖς μοναρχίαν νόσου ποιητικὴν· φθοροποιὸν γὰρ ἐκατέρου μοναρχίαν.—Aëtius V. 30. 1.

## GENERAL INTRODUCTION

theory in his philosophical system.<sup>1</sup> Empedocles, who flourished somewhat earlier than Philolaus, was a "medicine-man" rather than a physician, though he is called by Galen the founder of the Italian school of medicine.<sup>2</sup> The medical side of his teaching was partly magic and quackery.

This combination of medicine and philosophy is clearly marked in the Hippocratic collection. There are some treatises which seek to explain medical phenomena by *a priori* assumptions, after the manner of the philosophers with their method of *ὑποθέσεις* or postulates; there are others which strongly oppose this method. The Roman Celsus in his preface<sup>3</sup> asserts that Hippocrates separated medicine from philosophy, and it is a fact that the best works of the Hippocratic school are as free from philosophic assumptions as they are from religious dogma. But before attempting to estimate the work of Hippocrates it is necessary to consider, not only the doctrine of the philosophers, but also the possibly pre-Hippocratic books in the *Corpus*. These are the *Prenotions of Cos* and the *First Prorrhetic*,<sup>4</sup> and perhaps the treatise—in Latin and Arabic, the Greek original having mostly perished—on the number seven (*περὶ ἐβδομάδων*).

<sup>1</sup> For the medical theories of Philolaus see the extracts from the recently discovered *Iatrica* of Menon, discussed by Diels in *Hermes* XXVIII., p. 417 foll.

<sup>2</sup> Galen X. 5.

<sup>3</sup> Hippocrates . . . ab studio sapientiae disciplinam hanc separavit, vir et arte et facundia insignis.

<sup>4</sup> Grimm, Ermerins and Adams are convinced of the early date of these. Littré seems to have changed his mind. Contrast I. 351 with VIII. xxxix. The writer in Pauly-Wissowa is also uncertain. I hope to treat the question fully when I come to *Prognostic* in Vol. II.

## GENERAL INTRODUCTION

The *Prenotions of Cos* and the *First Prorrhetic* (the latter being the earlier, although both are supposed to be earlier than Hippocrates) show that in the medical school of Cos great attention was paid to the natural history of diseases, especially to the probability of a fatal or not fatal issue. The *Treatise on Seven*, with its marked Pythagorean characteristics, proves, if indeed it is as early as Roscher would have us believe, that even before Hippocrates disease was considered due to a disturbance in the balance of the humours, and health to a "coction" of them, while the supposed preponderance of seven doubtless exercised some influence on the later doctrine of critical days. The work may be taken to be typical of the Italian-Sicilian school of medicine, in which *a priori* assumptions of the "philosophic" type were freely admitted. Besides these two schools there was also a famous one at Cnidos,<sup>1</sup> the doctrines of which are criticised in the Hippocratic treatise *Regimen in Acute Diseases*. The defects of this school seem to have been:—

- (1) the use of too few remedies ;
- (2) faulty or imperfect prognosis ;
- (3) over-elaboration in classifying diseases.<sup>2</sup>

We may now attempt to summarize the com-

<sup>1</sup> There are several Cnidian treatises in the *Corpus*. See p. xxiii. The Cnidian point of view admits of defence, and their desire to classify was a really scientific instinct. I hope to treat of the Cnidians fully when I come to translate *Regimen in Acute Diseases*.

<sup>2</sup> The Coan school, on the other hand, sought for a unity in diseases. Its followers tried to combine, the Cnidians to distinguish and to note differences. See Littré II. 202-204.

## GENERAL INTRODUCTION

ponents of Greek medicine towards the end of the fifth century B.C.

(1) There was a religious element, which, however, had been generally discarded.

(2) There was a philosophic element, still very strong, which made free use of unverified postulates in discussing the causes and treatment—especially the former—of diseases.

(3) There was a rational element, which relied upon accurate observation and accumulated experience. This rationalism concluded that disease and health depended on environment and on the supposed constituents of the human frame.

Now if we take the Hippocratic collection we find that in no treatise is there any superstition,<sup>1</sup> in many there is much "philosophy" with some sophistic rhetoric, and among the others some are merely technical handbooks, while others show signs of a great mind, dignified and reserved with all the severity of the Periclean period, which, without being distinctively original, transformed the best tendencies in Greek medicine into something which has ever since been the admiration of doctors and scientific men. It is with the last only that I am concerned at present.

I shall make no attempt to fix with definite precision which treatises are to be included in this category, and I shall confine myself for the moment to three—*Prognostic*, *Regimen in Acute Diseases*, and *Epidemics I. and III.* These show certain characteristics, which, although there is no internal clue to

<sup>1</sup> A possible exception is *Decorum*, which I hope to discuss in Vol. II.

## GENERAL INTRODUCTION

either date or authorship, impress upon the reader a conviction that they were written by the same man, and at a time before the great period of Greece had passed away. They remind one, in a subtle yet very real way, of Thucydides.<sup>1</sup>

The style of each work is grave and austere. There is no attempt at "window-dressing." Language is used to express thought, not to adorn it. Not a word is thrown away. The first two treatises have a literary finish, yet there is no trace in them of sophistic rhetoric. Thought, and the expression of thought, are evenly balanced. Both are clear, dignified—even majestic.

The matter is even more striking than the style. The spirit is truly scientific, in the modern and strictest sense of the word. There is no superstition, and, except perhaps in the doctrine of critical days, no philosophy.<sup>2</sup> Instead, there is close, even minute, observation of symptoms and their sequences, acute remarks on remedies, and recording, without inference, of the atmospheric phenomena, which preceded or accompanied certain "epidemics." Especially noteworthy are the clinical histories, admirable for their inclusion of everything that is relevant and their exclusion of all that is not.

The doctrine of these three treatises may be summarised as follows:—<sup>3</sup>

<sup>1</sup> The resemblance struck Littré. See Vol. I., pp. 474, 475.

<sup>2</sup> Of course even in the greatest works of the Hippocratic *Corpus* there is, and could not help being, some theory. But the writer does not love the theory for its own sake. Rather he is constantly forgetting it in his eagerness to record observed fact.

<sup>3</sup> There is a clear account of Hippocratic doctrine in Littré, Vol. I., pp. 440–464.

## GENERAL INTRODUCTION

(1) Diseases have a natural course, which the physician must know thoroughly,<sup>1</sup> so as to decide whether the issue will be favourable or fatal.

(2) Diseases are caused by a disturbance<sup>2</sup> in the composition of the constituents of the body. This disturbance is connected with atmospheric and climatic conditions.

(3) Nature tries to bring these irregularities to a normal state, apparently by the action of innate heat, which "concocts" the "crude" humours of the body.

(4) There are "critical" days at fixed dates, when the battle between nature and disease reaches a crisis.

(5) Nature may win, in which case the morbid matters in the body are either evacuated or carried off in an ἀπόσταισις,<sup>3</sup> or the "coction" of the morbid elements may not take place, in which case the patient dies.

(6) All the physician can do for the patient is to give nature a chance, to remove by regimen all that may hinder nature in her beneficent work.

It may be urged that this doctrine is as hypothetical as the thesis that all diseases come from air. In a sense it is. All judgments, however simple, attempting to explain sense-perceptions, are hypotheses. But hypotheses may be scientific or philosophic, the latter term being used to denote the

<sup>1</sup> This knowledge is πρόγνωσις.

<sup>2</sup> It is not clear whether this disturbance is regarded as quantitative, qualitative, or both.

<sup>3</sup> This term will be explained later. Roughly speaking, it means the collection and expulsion of morbid elements at a fixed point in the body. I translate it "abscession," a term which suggests "abscess," perhaps the most common form of an "abscession."

## GENERAL INTRODUCTION

character of early Greek philosophy. A scientific hypothesis is a generalization framed to explain the facts of experience; it is not a foundation, but is in itself a superstructure; it is constantly being tested by appeals to sense-experience, and is kept, modified or abandoned, according to the support, or want of support, that phenomena give to it. A "philosophic" hypothesis is a generalization framed with a view to unification rather than to accounting for all the facts; it is a foundation for an unsubstantial superstructure; no efforts are made to test it by appeals to experience, but its main support is a credulous faith.

Now the doctrine of the *Epidemic* group is certainly not of the philosophic kind. Some of it was undoubtedly derived from early philosophic medicine, but in this group of treatises observed phenomena are constantly appealed to; nor must it be forgotten that in the then state of knowledge much that would now be styled inference was then considered fact, *e. g.* the "coction" of phlegm in a common cold. Throughout, theory is in the background, observation in the foreground. It is indeed most remarkable that Hippocratic theory is hard to disentangle from the three works on which my argument turns. It is a nebulous framework, implied in the technical phraseology—*πέψις, κρίσις, κρᾶσις*—and often illustrated by appeal to *data*, but never obtrusively insisted upon.

In 1836 a French doctor, M. S. Houdart,<sup>1</sup> violently attacked this medical doctrine on the ground that it

<sup>1</sup> *Études historiques et critiques sur la vie et la doctrine d'Hippocrate, et sur l'état de la médecine avant lui.* Paris and London.



## GENERAL INTRODUCTION

neglected the physician's prime duty,<sup>1</sup> which is to effect a cure. Diagnosis, he urges, is neglected in the cult of prognosis; no attempt is made to localize the seat of disease; the observations in the *Epidemics* are directed towards superficial symptoms without any attempt to trace them to their real cause. The writer is an interested but callous spectator who looks on unmoved while his patient dies.<sup>2</sup>

In this rather rabid criticism there is a morsel of truth. The centre of interest in these treatises is certainly the disease rather than the patient. The writer is a cold observer of morbid phenomena, who has for a moment detached himself from pity for suffering. But this restraint is in reality a virtue; concentration on the subject under discussion is perhaps the first duty of a scientist. Moreover, we must not suppose that the fatally-stricken patients of the *Epidemics* received no treatment or nursing. Here and there the treatment is mentioned or hinted at,<sup>3</sup> but the writer assumes that the usual methods

<sup>1</sup> "Attendre qu'il plaise à la nature de nous délivrer de nos maux, c'est laisser l'économie en proie à la douleur, c'est donner le temps aux altérations de dévorer nos viscères, c'est, en un mot, nous conduire sûrement à la mort."—*Op. cit.* p. 253. M. Houdart was but following the example of Asclepiades, the fashionable physician at Rome in the first century B.C., who called the Hippocratic treatment a "meditation upon death."

<sup>2</sup> "Lisez les *Épidémies*. Si votre cœur résiste à cette lecture, vous l'avez de bronze. Qui peut voir en effet de sang-froid cette foule d'infortunés conduits à pas lents sur les bords de la tombe, où ils finissent la plupart par tomber, après avoir souffert durant trois ou quatre mois entiers les douleurs les plus variées et les plus aiguës?"—*Op. cit.* p. 246.

<sup>3</sup> E.g. *Epid.* III. Case VIII. (second series): θερμίσματα and ὀγκόρ ἀγκῶνα ἔταμον.

## GENERAL INTRODUCTION

were followed, and does not mention them because they are irrelevant.

The charge of callousness may be dismissed. More serious is the attack on the fundamental principle of Hippocratic medicine, that "nature" alone can effect a cure, and that the only thing the physician can do is to allow nature a chance to work. Modern medical science has accepted this principle as an ultimate truth, but did the writer of the three treatises under discussion do his best to apply it? Did he really try to serve nature, and, by so doing, to conquer her? Houdart says that practically all the author of the *Epidemics* did was "to examine stools, urine, sweats, etc., to look therein for signs of coction, to announce crises and to pronounce sentences of death,"<sup>1</sup> in other words that he looked on and did nothing. I have just pointed out that the silence of the *Epidemics* on the subject of treatment must not be taken to mean that no treatment was given, but it remains to be considered whether all was done that could have been done. What remedies were used by the author of *Regimen in Acute Diseases*? They were:—

- (1) Purgatives and, probably, emetics.
- (2) Fomentations and baths.
- (3) (a) Barley-water and barley-gruel, in the preparation and administering of which great care was to be taken.
- (b) Wine.
- (c) Hydromel, a mixture of honey and water; and oxymel, a mixture of honey and vinegar.

<sup>1</sup> *Op. cit.* p. 247.

## GENERAL INTRODUCTION

(4) Venesection.

(5) Care was taken not to distress the patient.<sup>1</sup>

If we take into account the scientific knowledge of the time, it is difficult to see what more the physician could have done for the patient. Even nowadays a sufferer from measles or influenza can have no better advice than to keep warm and comfortable in bed, to take a purge, and to adopt a diet of slops. Within the last few years, indeed, chemistry has discovered febrifuges and anaesthetics, the microscope has put within our reach prophylactic vaccines, and the art of nursing has improved out of all recognition, but nearly all these things were as unknown to M. Houdart as they were in the fifth century B.C.

This criticism of Hippocratic medicine has been considered, not because it is in itself worthy of prolonged attention, but because it shows that underlying the three treatises I have mentioned there is a fundamental principle, a unity, a positive characteristic implying either a united school of thought or else a great personality. All antiquity agreed that they were written by the greatest physician of ancient times—Hippocrates. Within the last hundred years, however, doubts have been expressed whether Hippocrates wrote anything. Early in the nineteenth century a doctor of Lille published a thesis intitled *Dubitationes de Hippocratis vita, patria, genealogia, forsán mythologicis, et de quibusdam eius libris nullo*

<sup>1</sup> It should be noticed that in all the Hippocratic collection no attention is paid to the pulse. The doctor judged whether a patient was feverish, and estimated the degree of fever, by the touch. I have not translated *πυρεὶς ὀξύς* by "high temperature," but by "acute fever," because I wish to introduce as few anachronisms as possible.

## GENERAL INTRODUCTION

*antiquioribus quam vulgo creditur.* Wellmann and Wilamowitz hold similar views nowadays. As the Hippocratic writings are all anonymous, such a hypothesis is not difficult to maintain. But it is a matter of merely antiquarian interest whether or not the shadowy "Hippocrates" of ancient tradition is really the writer of the *Epidemics*. The salient and important truth is that in the latter half of the fifth century works were written, probably by the same author, embodying a consistent doctrine of medical theory and practice, free from both superstition and philosophy, and setting forth rational empiricism of a strictly scientific character. If in future I call the spirit from which this doctrine emanated "Hippocrates" it is for the sake of convenience, and not because I identify the author with the shadowy physician of tradition.

Similar in style and in spirit to the three treatises discussed above are *Aphorisms* and *Airs Waters Places*, along with two surgical works, *Fractures*<sup>1</sup> and *Wounds in the Head*. The severely practical character of the last is particularly noteworthy, and makes the reader wonder to what heights Greek surgery would have risen had antiseptics been known. *Aphorisms* is a compilation, but a great part shows a close relationship to the Hippocratic group. The least scientific of all the seven treatises is *Airs Waters Places*, which, in spite of its sagacity and rejection of the supernatural, shows a tendency to facile and unwarranted generalization.

<sup>1</sup> With this should be joined the work *Articulations*, which is very closely allied to *Fractures*, and is supposed by Galen to have been originally combined with it as a single work. *Instruments of Reduction* appears to be a compendium of *Articulations*.

## GENERAL INTRODUCTION

### § 2. THE HIPPOCRATIC COLLECTION.

We are now in a position to attempt a brief analysis of the *Corpus Hippocraticum*. For the moment the external evidence of Galen and other ancient commentators, for or against the authenticity of the various treatises, will be passed over. This evidence is of great importance, but may tend to obscure the issue, which is the mutual affinities of the treatises as shown by their style and content.

In the first place the heterogeneous character of the *Corpus* should be observed. It contains:—

- (1) Text-books for physicians ;
- (2) Text-books for laymen ;
- (3) Pieces of research or collection of material for research.
- (4) Lectures or essays for medical students and novices.
- (5) Essays by philosophers who were perhaps not practising physicians, but laymen interested in medicine and anxious to apply to it the methods of philosophy.
- (6) Note-books or scrap-books.

Even single works often exhibit the most varied characteristics. It is as though loose sheets had been brought together without any attempt at co-ordination or redaction. *Epidemics I.*, for instance, jumps with startling abruptness from a “constitution” of the diseases prevalent at one period in Thasos to the function of the physician in an illness, passing on to a few disjointed remarks on pains in the head and neck. Then follows another “constitution,” after which comes an elaborate classification of the

## GENERAL INTRODUCTION

ordinary fevers, with their periods, paroxysms and crises. At the end come fourteen clinical histories.

I have already mentioned a pre-Hippocratic group and a Hippocratic group, and it has been noticed that the main task of Greek medicine was to free science from superstition and from philosophic hypotheses. The *Corpus* contains two polemical works, *On Epilepsy* and *Ancient Medicine*, which attack respectively the "divine" origin of disease and the intrusion into medicine of the hypothetical speculation of philosophers.

There is another group of works which, while they do not display to any marked degree the Hippocratic characteristics, are nevertheless practical handbooks of medicine, physiology or anatomy. The list is a long one, and includes works by different authors and of different schools:—

*The Surgery.*

*The Heart.*

*Places in Man.*

*Glands.*

*Anatomy.*

*Nature of the Bones.*

*Sight.*

*Dentition.*

*Diseases I.*

*Diseases II. and III.<sup>1</sup>*

*Affections.<sup>1</sup>*

*Internal Affections.<sup>1</sup>*

*Sores.*

*Fistulae.*

*Hemorrhoids.*

<sup>1</sup> Shows influence of Cnidian school. So possibly do other books.

## GENERAL INTRODUCTION

*Prorrhetic II.*  
*The Physician.*  
*Crises.*  
*Critical Days.*  
*Purges.*  
*Use of Liquids.*

*Seventh Month Child.*  
*Eighth Month Child.*  
{ *Generation.*<sup>1</sup>  
*Nature of the Child.*<sup>1</sup>  
*Diseases IV.*<sup>1</sup>  
*Diseases of Women.*<sup>1</sup>  
*Barrenness.*<sup>1</sup>  
*Diseases of Girls.*  
*Nature of Women.*  
*Excision of the Foetus.*  
*Superfoetation.*

*Regimen in Health.*<sup>2</sup>  
*Regimen II. and III. with Dreams.*

Another most important group of works consists of those in which the philosophic element predominates over the scientific, the writers being anxious, not to advance the practice of medicine, but to bring medicine under the control of philosophic dogma, to achieve in fact the end attacked by the writer of *Ancient Medicine*. These works are *Nutriments*, *Regimen I.* and *Airs*. The first two are Heraclitean; the last is probably derived from Diogenes of Apollonia.

<sup>1</sup> Shows influence of Cnidian school. So possibly do other books.

<sup>2</sup> Really a continuation of *Nature of Man*.

## GENERAL INTRODUCTION

*Regimen I.*, however, while strongly Heraclitean, is eclectic. Animals are said to be composed of two elements, fire and water, fire being a composite of the hot and the dry, water of the cold and the moist. Certain sentences are strikingly reminiscent of Anaxagoras, so much so that it is impossible to regard the resemblances as accidental. Take for instance the following:—

(1) ἀπόλλυται μὲν οὖν οὐδὲν ἀπάντων χρημάτων, οὐδὲ γίνεται ὅτι μὴ καὶ πρόσθεν ἦν. ξυμμισγόμενα δὲ καὶ διακρινόμενα ἀλλοιοῦνται.—*Regimen I. iv.*

(2) οὐδὲν γὰρ χρήμα γίνεται οὐδὲ ἀπόλλυται, ἀλλ' ἀπὸ ἑόντων χρημάτων συμμίσχεται τε καὶ διακρίνεται.—*Anaxagoras, fr. 22 (Schaubach).*

To assign exact dates to these works is impossible, but they are probably much later than Heraclitus himself. The interesting fact remains that Heraclitus had followers who kept his doctrine alive, second-rate thinkers, perhaps, and unknown in the history of science, but hearty supporters of a creed, and ready to extend it to embrace all new knowledge as it was discovered. Particularly interesting is the work *Nutriments*. This not only adopts the theory of Heraclitus, but also mimics his sententious and mysterious manner of expression. A few examples may not be out of place.

φύσις ἐξαρκείει πάντα πᾶσιν.—*Nutriments xv.*  
κρατεῖ γὰρ [sc. ὁ θεῖος νόμος] . . . καὶ ἐξαρκείει  
πᾶσι.—*Heraclitus apud Stob. Flor. III. 84.*

μία φύσις εἶναι καὶ μὴ εἶναι.—*Nutriments xxiv.*  
εἰμὲν τε καὶ οὐκ εἰμεν.—*Heraclitus Alleg. Hom. 24.*  
ὁδὸς ἄνω κάτω, μία.—*Nutriments xlv.*



## GENERAL INTRODUCTION

ὁδὸς ἄνω καὶ κάτω μία καὶ ὤντη.—Heraclitus *apud* Hippolyt. IX. 10.

πρὸς τι πάντα φλαῦρα καὶ πάντα ἀστεία.—*Nutrient* XLV.

θάλασσα ὕδωρ καθαρώτατον καὶ μιαρώτατον, ἰχθύσι μὲν πότιμον καὶ σωτήριον, ἀνθρώποις δὲ ἄποτον καὶ ὀλέθριον.—Heraclitus *apud* Hippolyt. IX. 10.

χωρεῖ δὲ πάντα καὶ θεῖα καὶ ἀνθρώπεια, ἄνω καὶ κάτω ἀμειβόμενα.—*Regimen* I. v.

Similar to these philosophic treatises are the essays, ἐπιδείξεις or displays, which propound theses which are not the ὑποθέσεις of philosophers. These are *The Art*, the object of which is to show that there is an art of medicine, and *Nature of Man*, which combats the monist philosophers, and sets forth the doctrine of the four humours as the cause of health, by their perfect *crasis*, and of disease, through a disturbance of that *crasis*. To this group we may perhaps add the treatise *Decorum*, which deals (among other things) with bed-side manners, and *Precepts*, a work similar in style and subject.

The last two works are interesting for their introductory remarks. *Decorum* practically identifies medicine and philosophy, which term is used to denote the philosophic spirit, with its moral as well as its intellectual attributes, and recognises the working of an agency not human; it is in fact typical of the ethical science, practical if occasionally commonplace, which came into vogue towards the end of the fourth century B.C. The introduction to *Precepts* is Epicurean. The first chapter, in fact, is a summary of Epicurean epistemology, and is full of the technical terms of that school. A single quotation will suffice :—

## GENERAL INTRODUCTION

ὁ γὰρ λογισμὸς μνήμη τίς ἐστι ξυνθετικὴ τῶν μετ' αἰσθησίου ληφθέντων· ἐφαντασιώθη γὰρ ἐναργέως ἡ αἴσθησις, προπαθῆς καὶ ἀναπομπὸς εὐῶσα εἰς διάνοιαν τῶν ὑποκειμένων.—*Precepts I.*

This definition of λογισμός is practically the same as that of the Epicurean πρόληψις given in Diogenes Laertius X. 33.

A few of the contents of the *Corpus Hippocraticum* remain unclassified. Of these, by far the most Hippocratic are *Epidemics II., IV. VII.* It is indeed remarkable that in antiquity they were not generally assigned to the "great" Hippocrates. The clinical histories are invaluable, although they are not so severely pertinent as those of *Epidemics I. and III.*, betraying sometimes an eye for picturesque but irrelevant detail.

The treatise curiously misnamed *Fleshes* contains, amid a variety of interesting anatomical and physiological detail, traces of Pythagoreanism in the virtue attached to the number seven, and of Heracliteanism in the view put forward that warmth is the spirit that pervades the universe.

*Humours* deals with the relations of humours to the seasons and so on.

*The Oath* and *The Law* are small but interesting documents throwing light on medical education and etiquette.

Finally, the *Epistles*<sup>1</sup> and *Decree*, although merely imaginary essays, show what manner of man Hippocrates was supposed to have been by the Greeks of a later age.

<sup>1</sup> It is interesting to note that the Platonic collection and the New Testament, like the *Corpus*, end with a series of letters.

## GENERAL INTRODUCTION

The Hippocratic collection is a medley, with no inner bond of union except that all the works are written in the Ionic dialect and are connected more or less closely with medicine or one of its allied sciences. There are the widest possible divergences of style, and the sharpest possible contradictions in doctrine. The questions present themselves, why were they united, and when did the union occur?

Littre's problem, "When was the Hippocratic collection published?"<sup>1</sup> cannot be answered, for it is more than doubtful whether, as a whole, the collection was ever published at all. The publication of a modern work must in no way be compared with the circulation of a book in ancient times. Printing and the law of copyright have created a revolution. As soon as an ancient author let go out of his possession a single copy of his book, it was, to all intents and purposes, "published." Copies might be multiplied without permission, and a popular and useful work was no doubt often circulated in this way. Now at least one hundred, perhaps three hundred, years separate the writing of the earliest work in the Corpus from the writing of the latest. Diocles knew the *Aphorisms*, Ctesias probably knew *Articulations*, and Menon certainly knew two or three treatises. Aristotle himself quotes from *Nature of Man*, though he ascribes it to Polybus. It is surely impossible to suppose with Littre that there was anything approaching a publication of the *Corpus* by the Alexandrian librarians. Even if they had published for the first time only a large portion of the collection, such a momentous event would scarcely have passed unnoticed by the

<sup>1</sup> Vol. I., chap. xi.

## GENERAL INTRODUCTION

long series of commentators culminating in Galen. The librarians of Alexandria could not have done more than establish a canon, and if our present collection represents their work in this direction it was done very badly, as the most superficial critic would not fail to notice that a great part of its contents is neither by Hippocrates himself nor by his school.

~~The Hippocratic collection is a library, or rather, the remains of a library. What hypothesis is more probable than that it represents the library of the Hippocratic school at Cos?~~ The ancient biographies of Hippocrates relate a fable that he destroyed the library of the Temple of Health at Cnidos (or, according to another form of the fable, at Cos) in order to enjoy a monopoly of the knowledge it contained. The story shows, at least, that such libraries existed, and indeed a school of medicine, like that which had its home at Cos, could not well have done without one. And what would this library contain? The works of the greatest of the Asclepiads, whether published or not; valuable works, of various dates and of different schools, bearing on medicine and kindred subjects; medical records and notes by distinguished professors of the school, for the most part unpublished; various books, of no great interest or value, presented to the library or acquired by chance.

The Hippocratic collection actually corresponds to this description. This is nearly all the historian is justified in saying. Beyond is mere conjecture. We can only guess when this library ceased to be the property of the Hippocratic school, and how it was transferred to one or other of the great libraries

## GENERAL INTRODUCTION

which were collected in Alexandrine times, to be re-copied and perhaps increased by volumes which did not belong to the original collection.

It may be urged that if the Hippocratic *Corpus* were originally a library, it is improbable that all the treatises composing it would be written in Ionic. But it is by no means certain when Ionic ceased to be the normal medium for medical science; for all we know the dialect may have been in vogue until long after the *κοινή* established itself throughout the Greek world. Moreover, we do not know what levelling forces were at work among copyists and librarians, inducing them to assimilate the dialects of medical works to a recognized model. We do know, however, that as centuries passed more and more Ionisms, most of them spurious, were thrust upon the Hippocratic texts. The process we can trace in the later history of the text may well have been going on, in a different form, in the fourth and third centuries B.C.

It is because I regard the Hippocratic collection as merely a library that I do not consider it worth while to attempt an elaborate classification, like those of Littré, Greenhill, Ermerins, and Adams. A library is properly catalogued according to subject matter, date, and authorship; it is of little use to view each separate volume in its relationship to a particular writer. The Hippocrates of tradition and the Hippocrates of the commentators may well be left buried in obscurity and uncertainty. What we do know, what must be our foundation stone, is that certain treatises in the *Corpus* are impressed with the marks of an outstanding genius, who inherited much but bequeathed much more. He stands for

xxx

## GENERAL INTRODUCTION

science and against superstition and hypothetical philosophy. The other contents of the *Corpus* are older or later than this nucleus, either in harmony with its doctrines or opposed to them. More than this we cannot hope to know for certain.

### § 3. MEANS OF DATING HIPPOCRATIC WRITINGS.

The means of fixing the dates of the treatises composing the Hippocratic collection are twofold—external and internal.

The external evidence consists of the statements of Galen and other ancient authors.

The internal tests are :—

- (a) The philosophical tenets stated or implied ;
- (b) The medical doctrines ;
- (c) The style of the treatise ;
- (d) The language and grammar.

(a) When a philosophic doctrine is adopted, or referred to as influential, it is presumptive evidence that the treatise was written before that doctrine grew out of date. We cannot, however, always be sure when a doctrine did grow out of date. It is a mistaken idea to suppose that the rise of a fresh school meant the death of its predecessors. It is certain, for instance, that Heraclitus had followers, after the rise of other schools, who developed his doctrines without altering their essential character.

(b) Medical doctrines also are by no means a certain test. If we could be sure that a knowledge

## GENERAL INTRODUCTION

of the pulse was unknown to the writers of the chief Hippocratic treatises, we should be more confident in dating, *e.g.*, the work called *Nutrimēt*, which recognizes the existence of a pulse. It is a fact that no use is made of this knowledge in any treatise of the collection, but we must not infer from this that the Hippocratic writers were ignorant of pulses. We can only infer that they were ignorant of their medical importance.

(c) The style of a treatise is sometimes a sure test and sometimes not. Sophistic rhetoric is of such a marked character in its most pronounced form that a treatise showing it is not likely to be much earlier than 427 B.C., nor much later than 400 B.C., when sophistic extravagances began to be modified under the influence of the Attic orators. But a work moderately sophistic in general style and sentence-structure may be much later.

There is also a subtle quality about writings later than 300 B.C., an unnatural verbosity and tortuousness of expression, a suspicion of the "baboo," that is as unmistakable as it is impalpable. A few of the Hippocratic treatises display this characteristic.

(d) In some respects grammar and diction are the surest tests of all. If the negative  $\mu\eta$  is markedly ousting  $\alpha\upsilon$  it is a sure sign of post-Alexandrine date. A preference for compound words with abstract meaning, in cases where a simple expression would easily have sufficed, is a mark of later Greek prose. If any reader wishes for concrete evidence to support my rather vague generalisations, he has only to read *Epidemics I.*, then *The Art* or *Regimen I.*, and finally *Precepts* or *Decorum*, and try to note the differences.

## GENERAL INTRODUCTION

### § 4. PLATO'S REFERENCES TO HIPPOCRATES.

In the *Protagoras* (311 B) Plato assumes the case of a young man who goes to Ἴπποκράτη τὸν Κῶν, τὸν τῶν Ἀσκληπιδῶν, to learn medicine. This passage tells us little except that Hippocrates took pupils for a fee. But in the *Phaedrus* (270 C—E) there is another passage which professes to set forth the true Hippocratic method. It is as follows :—

*Socrates.* Do you think it possible, then, satisfactorily to comprehend the nature of soul apart from the nature of the universe?

*Phaedrus.* Nay, if we are to believe Hippocrates, of the Asclepiad family, we cannot learn even about the body unless we follow this method of procedure.

*Socrates.* Yes, my friend, and he is right. Yet besides the doctrine of Hippocrates, we must examine our argument and see if it harmonizes with it.

*Phaedrus.* Yes.

*Socrates.* Observe, then, what it is that both Hippocrates and correct

ΣΩ. Ψυχῆς οὖν φύσιν ἀξίως λόγου κατανοῆσαι οἷε δυνατόν εἶναι ἄνευ τῆς τοῦ ὅλου φύσεως ;

ΦΑΙ. Εἰ μὲν οὖν Ἴπποκράτει γε τῷ τῶν Ἀσκληπιδῶν δεῖ τι πείθεσθαι, οὐδὲ περὶ σώματος ἄνευ τῆς μεθόδου ταύτης.

ΣΩ. Καλῶς γάρ, ὦ ἑταῖρε, λέγει. χρὴ μέντοι πρὸς τῷ Ἴπποκράτει τὸν λόγον ἐξετάζοντα σκοπεῖν εἰ συμφωνεῖ.

ΦΑΙ. Φημί.

ΣΩ. Τὸ τοίνυν περὶ φύσεως σκόπει τί ποτε λέγει Ἴπποκράτης τε καὶ ὁ

xxxiii



## GENERAL INTRODUCTION

argument mean by an examination of nature. Surely it is in the following way that we must inquire into the nature of anything. In the first place we must see whether that, in which we shall wish to be craftsmen and to be able to make others so, is simple or complex. In the next place, if it be simple, we must inquire what power nature has given it of acting, and of acting upon what; what power of being acted upon, and by what. If on the other hand it be complex, we must enumerate its parts, and note in the case of each what we noted in the case of the simple thing, through what natural power it acts, and upon what, or through what it is acted upon, and by what.

ἀληθῆς λόγος. ἄρ' οὐχ ὧδε δεῖ διανοεῖσθαι περὶ ὁτουοῦν φύσεως; πρῶτον μὲν, ἀπλοῦν ἢ πολυνειδές ἐστιν, οὐ περὶ βουλευσόμεθα εἶναι αὐτοὶ τεχνικοὶ καὶ ἄλλον δυνατοὶ ποιεῖν, ἔπειτα δέ, ἐὰν μὲν ἀπλοῦν ἢ, σκοπεῖν τὴν δύναμιν αὐτοῦ, τίνα πρὸς τί πέφυκεν εἰς τὸ δρᾶν ἔχον ἢ τίνα εἰς τὸ παθεῖν ὑπὸ τοῦ; ἐὰν δὲ πλείω εἶδη ἔχῃ, ταῦτα ἀριθμησάμενον, ὅπερ ἐφ' ἐνός, τοῦτ' ἰδεῖν ἐφ' ἐκάστου, τῷ τί ποιεῖν αὐτὸ πέφυκεν ἢ τῷ τί παθεῖν ὑπὸ τοῦ;—*Phaedrus* 270 C, D.

It is obvious that if we could find passages in the Hippocratic collection which clearly maintain the doctrine propounded in this part of the *Phaedrus* we should be able to say with confidence that the

## GENERAL INTRODUCTION

Hippocrates of history and tradition was the author of such and such a treatise.

Galen maintains that Plato refers to the treatise *Nature of Man*. I believe that few readers of the latter will notice any striking resemblances between this work<sup>1</sup> and the doctrine outlined by Plato. More plausible is the view of Littré, that Plato refers to Chapter XX of *Ancient Medicine*, which contains the following passage :—

ἐπεὶ τοῦτό γε μοι δοκεῖ ἀναγκαῖον εἶναι παντὶ ἰητρῷ περὶ φύσιος εἰδέναι, καὶ πάνν σπουδάσαι ὡς εἴσεται, εἴπερ τι μέλλει τῶν δεόντων ποιήσκειν, ὃ τί τέ ἐστὶν ἄνθρωπος πρὸς τὰ ἐσθιόμενά τε καὶ πινόμενα, καὶ ὃ τι πρὸς τὰ ἄλλα ἐπιτηδεύματα, καὶ ὃ τι ἀφ' ἐκάστου ἐκάστῳ συμβήσκειται.

Here the resemblance is closer—close enough to show that the author of *Ancient Medicine*, if he be not the Hippocrates of history, at least held views similar to his. And here the question must be left. Few would maintain with Littré that the resemblance between the two passages is so striking that they must be connected; few again would deny that Plato was thinking of *Ancient Medicine*. Ignorance and uncertainty seem to be the final result of most of the interesting problems presented by the Hippocratic collection.

### § 5. THE COMMENTATORS AND OTHER ANCIENT AUTHORITIES.

About the time of Nero a glossary of unusual Hippocratic terms was written by Erotian, which

<sup>1</sup> To my mind the closest resemblances are in Chapters VII and VIII, which deal with the relations between the "four humours" and the four seasons.

## GENERAL INTRODUCTION

still survives. Erotian was not the first to compose such a work, nor was he the last, the most famous of his successors being Galen. An examination of this glossary, combined with testimony derived from Galen, throws some light on the history of the Hippocratic collection. It will be well to quote a passage from Erotian's introduction, which contains a fairly complete list of commentators.

Παρά ταύτην γέ τοι τὴν αἰτίαν πολλοὶ τῶν ἑλλογίμων οὐκ ἰατρῶν μόνον, ἀλλὰ καὶ γραμματικῶν ἐσπούδασαν ἐξηγήσασθαι τὸν ἄνδρα καὶ τὰς λέξεις ἐπὶ τὸ κοινότερον τῆς ὁμιλίας ἀγαγεῖν. Ξενοκρίτος γὰρ ὁ Κῶος, γραμματικὸς ὢν, ὥς φησιν ὁ Ταραντῖνος Ἡρακλείδης, πρῶτος ἐπεβάλετο τὰς τοιαύτας ἐξαπλοῦν φωνάς. ὥς δὲ καὶ ὁ Κιτιεὺς Ἀπολλώνιος ἱστορεῖ, καὶ Καλλίμαχος ὁ ἀπὸ τῆς Ἡροφίλου οἰκίας. μεθ' ὃν φασὶ τὸν Ταναγραῖον Βακχείον ἐπιβαλεῖν τῇ πραγματείᾳ καὶ διὰ τριῶν συντάξεων πληρῶσαι τὴν προθεσμίαν, πολλὰς παραθέμενον εἰς τοῦτο μαρτυρίας ποιητῶν, ᾧ δὴ τὸν ἐμπειρικὸν συγχρονήσαντα Φιλῖνον διὰ ἐξαβίβλου πραγματείας ἀντειπεῖν, καίπερ Ἐπικλέους τοῦ Κρητὸς ἐπιτεμομένου τὰς Βακχείου λέξεις διὰ . . . συντάξεων, Ἀπολλωνίου τε τοῦ Ὀφews ταῦτ' ἐποίησαντος, καὶ Διοσκορίδου τοῦ Φακᾶ πᾶσι τούτοις ἀντειπόντος δι' ἑπτὰ βιβλίων, Ἀπολλωνίου τε τοῦ Κιτιέως ὀκτωκαίδεκα πρὸς τὰ τοῦ Ταραντίνου τρία πρὸς Βακχείον διαγράψαντος, καὶ Γλανκίου τοῦ ἐμπειρικοῦ δι' ἑνὸς πολυστίχου πάνυ καὶ κατὰ στοιχείον πεποιημένου ταῦτ' ἐπιτηδεύσαντος πρὸς τε τούτοις Λυσιμάχου τοῦ Κῶου κ' βιβλίων ἐκπονήσαντος πραγματείαν μετὰ τοῦ τρία μὲν γράψαι πρὸς Κυδίαν τὸν Ἡροφίλειον, τρία δὲ πρὸς Δημήτριον. τῶν δὲ γραμματικῶν οὐκ ἔστιν ὅστις ἑλλόγιμος φανεὶς παρήλθε τὸν ἄνδρα. καὶ γὰρ ὁ ἀναδεξάμενος αὐτὸν Εὐφορίων πᾶσαν ἐσπούδασε λέξιν ἐξηγήσασθαι διὰ βιβλίων σ', περὶ ὧν γεγράφασιν

xxxvi

## GENERAL INTRODUCTION

Ἀριστοκλῆς καὶ Ἀριστέας οἱ Ῥόδιοι. ἔτι δὲ Ἀρίσταρχος καὶ μετὰ πάντας Ἀντίγονος καὶ Δίδυμος οἱ Ἀλεξανδρεῖς.— pp. 4, 5 (Nachmanson).

A good account of the commentators is given by Littré, vol. I., pp. 83 foll. Herophilus (about 300 B.C.) appears to have been the first; Bacchius his pupil edited *Epidemics III.*, wrote notes on three other Hippocratic works, and compiled a glossary. A great number of short fragments of the works of Bacchius still survive. The most celebrated commentator, a medical man as well as a scholar, was Heraclides of Tarentum, who lived rather later than Bacchius.

Erotian in his introduction gives the following list of Hippocratic works:—

σημειωτικὰ μὲν οὖν ἐστὶ ταῦτα· Προγνωστικόν, Προρρητικὸν α' καὶ β' (ὥς οὐκ ἔστιν Ἴπποκράτους, ἐν ἄλλοις δείξομεν), Περὶ χυμῶν. αἰτιολογικὰ δὲ καὶ φυσικὰ· Περὶ φυσῶν, Περὶ φύσεως ἀνθρώπου, Περὶ ἱερᾶς νόσου, Περὶ φύσεως παιδίου, Περὶ τόπων καὶ ὥρων. θεραπευτικὰ δὲ τῶν μὲν εἰς χειρουργίαν ἀνηκόντων· Περὶ ἀγμῶν, Περὶ ἄρθρων, Περὶ ἐλκῶν, Περὶ τραυμάτων καὶ βελῶν, Περὶ τῶν ἐν κεφαλῇ τραυμάτων, Κατὰ ἰητρείον, Μοχλικόν, Περὶ αἱμορροΐδων καὶ συρίγγων. εἰς δίαιταν· Περὶ νούσων α' β', Περὶ πτισάνης, Περὶ τόπων τῶν κατὰ ἄνθρωπον, Γυναικείων α' β', Περὶ τροφῆς, Περὶ ἀφόρων, Περὶ ὑδάτων. ἐπίμικτα δὲ ἐστὶ ταῦτα· Ἀφορισμοί, Ἐπιδημιαί ζ'. τῶν δ' εἰς τὸν περὶ τέχνης τεινόντων λόγον· Ὁρκος, Νόμος, Περὶ τέχνης, Περὶ ἀρχαίας ἱατρικῆς. Πρεσβευτικὸς γὰρ καὶ Ἐπιβώμιος φιλόπατριν μᾶλλον ἢ ἱατρὸν ἐμφαίνουσι τὸν ἄνδρα.— p. 9 (Nachmanson).

The actual glossary, however, refers to more works than these, as will appear from the following table.

xxxvii

# GENERAL INTRODUCTION

## LISTS OF THE HIPPOCRATIC COLLECTION

[Works known to the authors, not necessarily attributed by them to Hippocrates.]

Littre vol.	Name.	Bacch'us.	Celsus.	Erotian.
1	περί ἀρχαίης ἰητρικῆς .		×	×
2	περί ἀέρων ὑδάτων τόπων	×	×	×
„	προγνωστικόν .	×	×	×
„	περί διαίτης ὀξέων .	×	×	×
„	ἐπιδημίαι 1 .	×	×	×
3	ἐπιδημίαι 3 .	×	×	×
„	περί τῶν ἐν κεφαλῇ τραυ- μάτων .	×	×	×
„	κατ' ἰητροῖον .	×	×	×
„	περί ἀγμῶν .	?	×	×
4	περί ἀρθρῶν .	×	×	×
„	μοχλικόν .	×		×
„	ἀφορισμοί .	×	×	×
„	ὄρκος .			×
„	νόμος .			×
5	ἐπιδημίαι 2 .	×	×	×
„	„ 4 .			×
„	„ 5 .		×	×
„	„ 6 .	×		×
„	„ 7 .			×
„	περί χυμῶν .	×	×	×
„	προρρητικὸν 1 .	×		×
„	Κωακαὶ προγνώσεις .		×	
6	περί τέχνης .	×	×	×
„	περί φύσιος ἀνθρώπου .			×
„	περί διαίτης ὑγιεινῆς .		×	
„	περί φυσῶν .		×	×
„	περί χρήσιος ὑγρῶν .	×		×
„	περί νούσων 1 .	×		×
„	περί παθῶν .		×	×
„	περί τόπων τῶν κατ' ἀνθρώπον .	×		×
„	περί ἱερῆς νούσου .	×		×
„	περί ἐλκῶν .			×
„	περί αἱμορροῖδων .			×
„	περί συρίγγων .		×	×

# GENERAL INTRODUCTION

Littre vol.	Name.	Bacchius.	Celsus.	Erotian.
6	περὶ διαίτης 1 . .			× ×
„	„ 2 . .		×	× ×
„	„ 3 . .			× ×
„	περὶ ἐνυπνίων . .			
7	περὶ νούσων 2 . .		×	× ×
„	περὶ νούσων 3 . .			× ×
„	περὶ τῶν ἐντος παθῶν . .		×	× ×
„	περὶ γυναικείης φύσιος . .			
„	περὶ ἐπταμήνου . .			
„	περὶ ὀκταμήνου . .			
„	περὶ γονῆς . .			× ×
„	περὶ φύσιος παιδίου . .	×		×
„	περὶ νούσων 4 . .			
8	περὶ γυναικείων 1 and 2 . .			×
„	περὶ ἀφόρων . .			×
„	περὶ παρθενίων . .			
„	περὶ ἐπικυήσιος . .			
„	περὶ ἐγκατατομῆς ἐμβρύου . .			
„	περὶ ἀνατομῆς . .			
„	περὶ ὀδοντοφυΐης . .			
„	περὶ ἀδένων . .			
„	περὶ σάρκων . .			× ×
„	περὶ ἐβδομάδων . .			× ×
9	προρρητικὸν 2 . .		×	×
„	περὶ καρδίας . .	?	×	
„	περὶ τροφῆς . .			×
„	περὶ ὕψιος . .			
„	περὶ ὀστέων φύσιος . .	×		× ×
„	περὶ ἰητροῦ . .			
„	περὶ εὐσχημοσύνης . .			
„	παραγγελίαι . .			× ×
„	περὶ κρισίων . .			
„	περὶ κρισίμων . .			
„	ἐπιστολαί . .			
„	πρεσβευτικός . .			×
„	ἐπιβώμιος . .			×
70		23 ?	25	49

Erotian knew also *περὶ τραυμάτων καὶ βελῶν*, now lost.  
 The double × × means “by quotation, but not in the list.”  
xxxix

## GENERAL INTRODUCTION

N.B.—The list of Bacchius is made by noting where in the Hippocratic collection occur the strange words upon which he commented; that of Celsus by a comparison of similar passages; that of Erotian from his list, by noting where occur the γλῶσσαι explained by him, and from fragments in scholia (see E. Nachmanson's edition, pp. 99 foll.). Of course the list of Celsus is dubious from its nature, and Bacchius may have known many more treatises than those we are sure he did know.

The recently discovered history of medicine called Menon's *Iatrica*<sup>1</sup> contains several references to Hippocrates. Diels is of opinion that they are very erroneous.<sup>2</sup>

In § V. the writer says that according to Hippocrates diseases are caused by "airs" (φύσαι), a statement which seems to be taken from περὶ φύσων, VI. 98 foll. Littré, and the doctrine is described in §§ V. and VI. In § VII. Hippocrates is said to hold doctrines which are taken from *Nature of Man*, VI. 52 foll. Littré. In § VIII. occur references to *Places in Man*, VI. 276, 294 Littré, and *Glands*, VIII. 564 Littré. In § XIX. occur references to *Nature of Man*, VI. 38 Littré, but the physician named is Polybus.

### Galen

Galen is the most important of the ancient commentators on Hippocrates, and of his work a great part has survived.

<sup>1</sup> Edited by H. Diels, Berlin, 1893. The work was probably written by a pupil of Aristotle.

<sup>2</sup> See Diels, p. xvi, note 1, and in *Hermes* XXVIII., pp. 410 foll.

## GENERAL INTRODUCTION

His writings are of value for two reasons :—

(1) They often give us a text superior to that of the MSS. of the *Corpus*. Sometimes this text is actually given in Galen's quotations; sometimes it is implied in Galen's commentary.<sup>1</sup>

(2) They sometimes throw light upon the interpretation of obscure passages.

Galen's ideal of a commentator is beyond criticism. He prefers ancient readings, even when they are the more difficult, and corrects only when these give no possible sense. In commenting he is of opinion that he should first determine the sense of the text and then see whether it corresponds with the truth.<sup>2</sup>

Unfortunately he is not so successful when he attempts to put his ideal into practice. He is intolerably verbose, and what is worse, he is eager so to interpret Hippocrates as to gain support therefrom for his own theories. A good example of this fault is his misinterpretation of *Epidemics* III. xiv. Littré gives as another fault his neglect of observation and observed fact.<sup>3</sup>

Galen wrote commentaries, which still survive, on the following :—

<i>Nature of Man.</i>	} One book in ancient times.
<i>Regimen of People in Health.</i>	
<i>Regimen in Acute Diseases.</i>	
<i>Prognostic.</i>	
<i>Prorrhetic I.</i>	
<i>Aphorisms.</i>	

<sup>1</sup> On the value of Galen for a reconstruction of the text see especially I. Ilberg in the *Prolegomena* to Kühlewein's edition Vol. I., pp. xxxiv–xlix and lviii–lxii.

<sup>2</sup> See Littré I. 120, 121.

<sup>3</sup> I. 121.



## GENERAL INTRODUCTION

*Epidemics I., II., III., VI.*

*Fractures.*

*Articulations.*

*Surgery.*

*Humours.*<sup>1</sup>

*Nutriments.*<sup>1</sup>

*Airs, Waters, Places* (only fragments survive).

We also have his *Glossary*.

Commentaries on the following are altogether lost :—

*Sores.*

*Wounds in the Head.*

*Diseases.*

*Affections.*

He also wrote (or promised to write) the following, none of which survive :—*Anatomy of Hippocrates, Characters in Epidemics III., Dialect of Hippocrates, The Genuine Writings of the Physician of Cos.*

Galen also knew : *Coan Prenotions, Epilepsy, Fistulae, Hemorrhoids, Airs, Places in Man, Regimen, Seven Months' Child, Eight Months' Child, Heart, Fleshes, Number Seven, Prorrhetic II., Glands,* and probably *Precepts*.

The most important of the Hippocratic treatises not mentioned by Galen are *Ancient Medicine* and *The Art*.

### § 6. LIFE OF HIPPOCRATES.

We possess three ancient biographies of Hippocrates : one by Suidas, one by Tzetzes, and one by Soranus, a late writer of uncertain date.

<sup>1</sup> These are supposed by the latest criticism not to be genuine.

## GENERAL INTRODUCTION

From these we gather that Hippocrates was born in Cos in 460 B.C.;<sup>1</sup> that he belonged to the guild of physicians called Asclepiadae; that his father was Heraclides, and his teachers were Herodicus and his own father; that he travelled all over Greece, and was a great friend of Democritus of Abdera; that his help was sought by Perdiccas king of Macedonia and by Artaxerxes king of Persia; that he stayed the plague at Athens and in other places; that his life was a long one but of uncertain length, the traditions making him live 85, 90, 104 or 109 years.

470 370 356 321

In these accounts there is a certain amount of fable, but in the broad outline there is nothing improbable except the staying of the Athenian plague, which is directly contrary to the testimony of Thucydides, who expressly states that medical help was generally unsuccessful.

The *Epistles* in the Hippocratic collection, and the so-called *Decree of the Athenians*, merely give, with fuller picturesqueness of detail, the same sort of information as is contained in the biographies.

Plato refers to Hippocrates in two dialogues—the *Protagoras*<sup>2</sup> and the *Phaedrus*.<sup>3</sup> The former passage tells us that Hippocrates was a Coan, an Asclepiad, and a professional trainer of medical students; the latter states as a fundamental principle of Hippocratic physiology the dogma that an understanding of the body is impossible without an understanding of nature as a whole, in modern

<sup>1</sup> Aulus Gellius *N.A.* XVII. 21 says that he was older than Socrates. This statement, if true, would put his birth prior to 470 B.C.

<sup>2</sup> 311 B.C.

<sup>3</sup> 270 C-E.

## GENERAL INTRODUCTION

language, physiology is inseparable from physics and chemistry.

From Aristotle<sup>1</sup> we learn that Hippocrates was already known as "the Great Hippocrates."

Such is the ancient account of Hippocrates, a name without writings, as Wilamowitz says. There is no quotation from any treatise in the *Corpus* before Aristotle,<sup>2</sup> and he assigns as the author not Hippocrates but Polybus.<sup>3</sup> The *Phaedrus* passage, indeed, has been recognized by Littré as a reference to *Ancient Medicine*, but Galen is positive that it refers to *Nature of Man*.

In fact the connexion between the great physician and the collection of writings which bears his name cannot with any confidence be carried further back than Ctesias the Cnidian,<sup>4</sup> Diocles of Carystus<sup>5</sup> and Menon,<sup>6</sup> the writer of the recently discovered *Iatrica*. Ctesias and Diocles belong to the earlier half of the fourth century, and Menon was a pupil of Aristotle.

### § 7. THE ASCLEPIADAE.

Hippocrates was, according to Plato, an Asclepiad. This raises the very difficult question, who the Asclepiadae were. Its difficulty is typical of several

<sup>1</sup> *Politics*, VII. 4 (1326 a).

<sup>2</sup> Who quotes from *Nature of Man*.

<sup>3</sup> See Littré VI. 58 and Aristotle *Hist. Animal.* III. 3 (512 b), and compare Galen XV. 11.

<sup>4</sup> Ctesias appears to have known the treatise *Articulations*, Littré I. 70.

<sup>5</sup> Diocles criticises *Aphorisms* II. 33. See Dietz *Scholia in Hippocratem et Galenum* II. 326, and Littré I. 321-323.

<sup>6</sup> Menon refers to *Airs* (*περὶ φυσῶν*), *Nature of Man*, *Places in Man*, and *Glands*, Hippocrates being expressly connected with the first two.

## GENERAL INTRODUCTION

Hippocratic problems. Certainty, even approximate certainty, is impossible owing to the scantiness of the evidence.

The old view, discarded now by the most competent authorities, is that the Asclepiadae were the priests of the temples of Asclepius, combining the functions of priest and physician. This view implied that Hippocratic medicine had its origin in temple-practice. For a thorough refutation of it see Dr. E. T. Withington's excursus in my *Malaria and Greek History*<sup>1</sup> and his own book *Medical History from the Earliest Times*.<sup>2</sup>

Another view is that the Asclepiadae were a guild, supposed to have been founded by Asclepius, the members of which were bound by rules and swore the Hippocratic "Oath." Such is the view of Dr. Withington himself. It is one which is free from all intrinsic objections, but it is supported by the scantiest of positive evidence.

It should be noticed that the term "Asclepiadae" means literally "the family of Asclepius," and it is at least possible that the Asclepiads were a clan of hereditary physicians who claimed to be descended from Asclepius. It would be very easy for such a family to develop into something like a guild by the admission, or rather adoption, of favoured outsiders. In this way the term might readily acquire the general meaning of medical practitioner, which it apparently has in *e. g.* Theognis 432 :—

εἰ δ' Ἀσκληπιάδαις τοῦτό γ' ἔδωκε θεός,  
ἰᾶσθαι κακότητα καὶ ἀτηρὰς φρένας ἀνδρῶν,  
πολλοὺς ἂν μισθοὺς καὶ μεγάλους ἔφερον.

<sup>1</sup> pp. 137-156.

<sup>2</sup> pp. 45, 46 and 378.

## GENERAL INTRODUCTION

I do not think that it has been noticed what an interesting parallel is afforded by the term "Homeridae." A family of poets tracing their descent from Homer finally could give their name to any public reciter of the Homeric poems.<sup>1</sup>

### § 8. THE DOCTRINE OF HUMOURS.

The doctrine of the humours probably had its origin<sup>2</sup> in superficial deductions from obvious facts of physiology, but it was strongly coloured by philosophic speculation, in particular by the doctrine of opposites. Indeed it is impossible to keep distinct the various influences which acted and reacted upon one another in the spheres of philosophy and medicine; only the main tendencies can be clearly distinguished.

Even the most superficial observer must notice (a) that the animal body requires air, fluid, and solid food; (b) that too great heat and cold are fatal to life, and that very many diseases are attended by fever; (c) that fluid is a necessary factor in digestion;<sup>3</sup> (d) that blood is in a peculiar way connected with life and health.

These simple observations were reinforced by the speculations of philosophers, particularly when philosophy took a biological or physiological turn, and

<sup>1</sup> See e.g. Pindar, *Nemean* II. 1.

<sup>2</sup> It is supposed by some that the humoral pathology originated in Egypt. See Sir Clifford Allbutt, *Greek Medicine in Rome*, p. 133.

<sup>3</sup> See *Nutrient* LV.: ὑγρασίη τροφῆς ὕχημα. See also *Diseases* IV., Littré VII. 568: τὸ σῶμα . . . ἀπὸ τῶν βρωτῶν καὶ τῶν ποτῶν τῆς ἰκμάδος ἐπαυρίσκεται.

## GENERAL INTRODUCTION

became interested in the organs of man and their functions.<sup>1</sup>

The second of the Greek philosophers, Anaximander,<sup>2</sup> taught that creation was made up of "opposites," though it is not clear how many he conceived these opposites to be. Many later thinkers, working on lines similar to those of Anaximander, made them four in number—the hot, the cold, the moist and the dry. These were the essential qualities of the four elements, fire, air, water, earth.

There was, however, no uniformity among thinkers as to the number of the opposites, and Alcmaeon, a younger contemporary of Pythagoras and a native of Croton, postulated an indefinite number.<sup>3</sup> Alcmaeon was a physician rather than a philosopher, and asserted that health was an *ισονομία* of these opposites and disease a *μοναρχία* of one.<sup>4</sup> This doctrine had a

<sup>1</sup> Empedocles, Philistion and Pausanias were the chief pioneers in this union of philosophy with medicine which the writer of *Ancient Medicine* so much deplores. See Burnet, *Early Greek Philosophy*, pp. 234, 235 (also Galen X. 5, οἱ ἐκ τῆς Ἰταλίας ἰατροὶ Φιλιστίων τε καὶ Ἐμπεδοκλῆς καὶ Πανσανίας καὶ οἱ τούτων ἐταῖροι.)

<sup>2</sup> He was also interested in biology. See Burnet, pp. 72, 73.

<sup>3</sup> Aristotle *Meta.* A 986 a 31: φησὶ γὰρ εἶναι δύο τὰ πολλὰ τῶν ἀνθρωπίνων, λέγων τὰς ἐναντιότητας οὐχ ὥσπερ οὗτοι [sc. οἱ Πυθαγόρειοι] διωρισμένους ἀλλὰ τὰς τυχοῦσας, οἷον λευκὸν μέλαν, γλυκύ πικρόν, ἀγαθὸν κακόν, μέγα μικρόν.

<sup>4</sup> Aëtius V. 30. 1, and Galen (Kühn) XIX. 343: Ἀλκμαίων τῆς μὲν ὑγείας εἶναι συνεκτικὴν ἰσονομίαν τῶν δυνάμεων ὑγροῦ, θερμοῦ, ξηροῦ, ψυχροῦ, πικροῦ, γλυκέος καὶ τῶν λοιπῶν, τὴν δὲ ἐν αὐτοῖς μοναρχίαν νόσου ποιητικὴν. See also 344: τὴν δὲ ὑγείαν σύμμετρον τῶν ποιῶν τὴν κρᾶσιν. It would be interesting if the technical word κρᾶσις could be traced back to Alcmaeon himself.

## GENERAL INTRODUCTION

strong influence upon the Coan school of medicine, and indeed upon medical theory generally.

But the opposites are not *χυμοί*: they are only *δυνάμεις*. The humoral pathology was not fully developed until for *δυνάμεις* were substituted fluid substances.<sup>1</sup> In tracing this development the historian is much helped by *Ancient Medicine*. It is here insisted that the hot, the cold, the moist and the dry are not substances; they are only "powers," and, what is more, powers of merely secondary importance.<sup>2</sup> The body, it is maintained, has certain essential *χυμοί*, which *χυμοί* have properties or "powers" with greater influence upon health than temperature. The number of the *χυμοί* is left indefinite. If the body be composed of opposite humours, and if health be the harmonious mixture or blending (*κρᾶσις*) of them, we shall expect to see one or other "lording it over the others" (*μοναρχία*) in a state of disease.

The two commonest complaints in ancient Greece, chest troubles and malaria, suggested as chief of these humours four: phlegm, blood (suggested by hemorrhage in fevers), yellow bile and black bile (suggested by the vomits, etc., in remittent malaria).

That the humours are four is first clearly stated in *Nature of Man*, which Aristotle assigns to Polybus, though Menon quotes a portion of it as Hippocratic. The passage in question runs: τὸ δὲ σῶμα τοῦ ἀνθρώπου

<sup>1</sup> It is a pity that the treatise *Humours* tells us so little about the humours themselves. It is merely a series of notes for lectures, heads of discourse to medical students.

<sup>2</sup> See especially Chapters XIV-XVII, in particular XVII: ἀλλ' ἔστι καὶ πικρὸν καὶ θερμὸν τὸ αὐτό, καὶ ὀξὺ καὶ θερμόν, καὶ ἀλμυρὸν καὶ θερμόν . . . τὰ μὲν οὖν λυμαινόμενα ταῦτ' ἔστι.

## GENERAL INTRODUCTION

ἔχει ἐν ἑωυτῷ αἷμα καὶ φλέγμα καὶ χολὴν ξανθὴν τε καὶ μέλαιναν, καὶ ταῦτα ἐστὶν αὐτῷ ἢ φύσις . . . ὑγιαίνει μὲν οὖν μάλιστα ὁκόταν μετρίως ἔχῃ ταῦτα τῆς πρὸς ἄλληλα κρήσιος καὶ δυνάμιος καὶ τοῦ πλήθους, καὶ μάλιστα μεμιγμένα ἢ κ.τ.λ. (Littre VI. 38 and 40).

Some thinkers, belonging to the school of Empedocles, and being more inclined towards philosophy than towards medicine, made the four chief opposites, materialized into fire, air, water and earth, the components of the body, and disease, or at any rate some of the chief diseases, an excess of one or other. We see this doctrine fairly plainly in Menon's account of Philistion,<sup>1</sup> and it is copied by Plato in the *Timaeus*.<sup>2</sup>

The doctrines I have described admitted many variations, and in Menon's *Iatrica*, which is chiefly an account of the origins of disease as given by various physicians, the most diverse views are set forth. Petron of Aegina, while holding that the body is composed of the four opposites, stated that disease was due to faulty diet, and that bile was the result and not the cause of disease.<sup>3</sup> Hippon thought that a suitable quantity of moisture was the cause of health; <sup>4</sup> Philolaus that disease was due to bile, blood and phlegm; <sup>5</sup> Thrasy-machus of Sardis that blood, differentiated by excess of cold or heat into phlegm, bile, or τὸ σεσηπός (matter or pus), was

<sup>1</sup> *Iatrica* XX. : Φιλιστίων δ' οἶεται ἐκ δ' ἰδεῶν συνεστάναι ἡμᾶς, τοῦτ' ἐστὶν ἐκ δ' στοιχείων πυρός, ἀέρος, ὕδατος, γῆς. εἶναι δὲ καὶ ἐκάστου δυνάμεις, τοῦ μὲν πυρὸς τὸ θερμόν, τοῦ δὲ ἀέρος τὸ ψυχρόν κ.τ.λ.

<sup>2</sup> 86 A: τὸ μὲν οὖν ἐκ πυρὸς ὑπερβολῆς μάλιστα νοσήσαν σῶμα ξυνεχῇ καύματα καὶ πυρετοὺς ἀπεργάζεται, τὸ δ' ἐξ ἀέρος ἀμφομερινούς κ.τ.λ.

<sup>3</sup> *Iatrica*, XX.

<sup>4</sup> *Ibid.*, XI.

<sup>5</sup> *Ibid.*, XVIII.



## GENERAL INTRODUCTION

the cause ; <sup>1</sup> Menecrates that the body is composed of blood, bile, breath and phlegm, and that health is a harmony of these. <sup>2</sup>

The Hippocratic collection shows similar diversity of opinion. *Diseases* IV. 51, gives as the four humours bile, blood, phlegm and ὕδρωψ (not water, but a watery humour). <sup>3</sup> *Affections* I. ascribes all diseases to bile and phlegm. <sup>4</sup> *Ancient Medicine* recognizes an indefinite number of humours.

The great Hippocratic group imply the doctrine of humours in its phraseology and outlook on symptoms, but it is in the background, and nowhere are the humours described. It is clear, however, that bile and phlegm are the most prominent, and bilious and phlegmatic temperaments are often mentioned in *Airs Waters Places* and *Epidemics* I. and III. There are signs of subdivision in πικρόχολοι <sup>5</sup> and λευκοφλεγματίαι. <sup>6</sup>

Amid all these differences, which by their very variety indicate that they belonged to theory without seriously affecting practice, there is one common principle—that health is a harmonious mingling of the constituents of the body. What these constituents are is not agreed, nor is it clear what exactly is meant by “mingling.”

The word ἀκρητος, which I have translated “unmixed” or “uncompounded,” is said by Galen to mean “consisting of one humour only.” It is more

<sup>1</sup> *Iatrica*, XI. (end).

<sup>2</sup> *Ibid.*, XIX.

<sup>3</sup> Littré VII. 584.

<sup>4</sup> *Ibid.*, VI. 208.

<sup>5</sup> *Regimen in Acute Diseases*, XXXIII. : οἱ πικρόχολοι τὰ ἄνω : *Epidemics* III. xiv. (end).

<sup>6</sup> *Epidemics* III. xiv.

## GENERAL INTRODUCTION

likely that the word means properly "showing signs that *crasis* has not taken place."

### Cocction

The course of our inquiry has brought us to the doctrine of "cocction" (πέψις). Familiar as a modern is with the difference between chemical blending and mechanical mixture, it is difficult for him to appreciate fairly theories put forward when this difference was unknown, and the human mind was struggling with phenomena it had not the power to analyse, and trying to express what was really beyond its reach. We must try to see things as the Greek physician saw them.

We have in Chapters XVIII and XIX of *Ancient Medicine* the most complete account of cocction as the ancient physician conceived of it. It is really the process which leads to κράσις as its result. It is neither purely mechanical nor yet what we should call chemical; it is the action which so combines the opposing humours that there results a perfect fusion of them all. No one is left in excess so as to cause trouble or pain to the human individual. The writer takes three types of illnesses—the common cold, ophthalmia and pneumonia—and shows that as they grow better the discharges become less acrid and thicker as the result of πέψις.

In one respect the writer of *Ancient Medicine* is not a trustworthy guide to the common conception of πέψις. He attached but little importance to heat, and it can scarcely be doubted that the action of heat upon the digestibility of foods, and the heat which accompanies the process of digestion itself,

## GENERAL INTRODUCTION

must have coloured the notion of *πέψις* as generally held. It is true that we read little about innate heat in the Hippocratic collection, but that is an accident, and it certainly was thought to have a powerful influence upon the bodily functions.<sup>1</sup>

A disease was supposed to result when the equilibrium of the humours, from some "exciting cause" or other (*πρόφασις*), was disturbed, and then nature, that is the constitution of the individual (*φύσις*), made every effort she could through coction to restore the necessary *κρᾶσις*.

### *Crisis*

The battle between nature and the disease was decided on the day that coction actually took place or failed to take place. The result was recovery, partial or complete, aggravation of the disease, or death. The crisis (*κρίσις*) is "the determination of the disease as it were by a judicial verdict."<sup>2</sup>

After a crisis there might, or might not, be a relapse (*ὑποστροφή*), which would be followed in due course by another crisis.

The crisis, if favourable, was accompanied by the expulsion of the residue remaining after coction and *κρᾶσις* of the humours had occurred. This expul-

<sup>1</sup> See *Aphorisms*, § I. 14: τὰ αὐξανόμενα πλείστον ἔχει τὸ ξμφυτον θερμόν· πλείστης οὖν δεῖται τροφῆς· εἰ δὲ μή, τὸ σῶμα ἀναλίσκεται κ.τ.λ.

<sup>2</sup> See Dr. E. T. Withington, *Classical Review*, May-June 1920, p. 65. There is a good definition of *κρίσις* in *Affections* VIII. (Littre VI. 216): κρίνεσθαι δὲ ἐστὶν ἐν ταῖς νούσοις, ὅταν αὐξωνται αἱ νοῦσοι ἢ μαραινῶνται ἢ μεταπίπτωσιν ἐς ἕτερον νόσημα ἢ τελεντῶσιν.

## GENERAL INTRODUCTION

sion might take place through any of the ordinary means of evacuation—mouth, bowels, urine, pores—and the evacuated matters were said to be concocted (πέποντα), that is to say, they presented signs that coction had taken place.<sup>1</sup>

But nature was not always able to use the ordinary means of evacuation. In this case there would be an abscession (ἀπόστασις). When the morbid residue failed to be normally evacuated, it was gathered together to one part of the body and eliminated, sometimes as an eruption or inflammation, sometimes as a gangrene or tumour, sometimes as a swelling at the joints.

An abscession did not necessarily mean recovery; it might merely be a change from one disease to another. The Hippocratic writers are not clear about the point, but apparently the abscession might fail to accomplish its purpose, and so the disease continued in an altered form.<sup>2</sup> In other words there was abscession without real crisis.

To trace the course of a disease through its various stages, and to be able to see what is portended by symptoms in different diseases and at different stages of those diseases, was an art upon which Hippocrates laid great stress. He called it πρόγνωσις, and it included at least half of the physician's work.

<sup>1</sup> The chief signs of coction were greater consistency, darker colour, and "ripeness" or "mellowness."

<sup>2</sup> The most important passages are :—

(a) οὐδὲ γὰρ αἱ γιγνόμεναι τούτοις ἀποστάσεις ἔκρινον ὥσπερ ἐπὶ τοῖς ἄλλοις (*Epidemics* III. XII.).

(b) ἀποστάσεις ἐγένοντο, ἥ μείζους ὥστε ὑποφέρειν μὴ δύνασθαι, ἥ μείους ὥστε μὴδὲν ὠφελεῖν ἀλλὰ ταχὺ παλινδρομεῖν κ.τ.λ. (*Epidemics* I. VIII.).

## GENERAL INTRODUCTION

### *Critical Days*

Crises took place on what were called critical days. It is a commonplace that a disease tends to reach a crisis on a fixed day from the commencement, although the day is not absolutely fixed, nor is it the same for all diseases. The writer of *Prognostic* and *Epidemics I.* lays it down as a general law that acute diseases have crises on one or more fixed days in a series.

In *Prognostic* Chapter XX the series for fevers is given thus:—4th day, 7th, 11th, 14th, 17th, 20th, 34th, 40th, 60th.

In *Epidemics I.* xxvi. two series are given:—

(a) diseases which have exacerbations on even days have crises on these even days: 4th, 6th, 8th, 10th, 14th, 20th, 24th, 30th, 40th, 60th, 80th, 120th.

(b) diseases which have exacerbations on odd days have crises on these odd days: 3rd, 5th, 7th, 9th, 11th, 17th, 21st, 27th, 31st.

A crisis on any other than a normal day was supposed to indicate a probably fatal relapse.

Galen thought that Hippocrates was the first to discuss the critical days, and there is no evidence against this view, though it seems more likely that it gradually grew up in the Coan school.<sup>1</sup>

What was the origin of this doctrine? Possibly it may in part be a survival of Pythagorean magic, numbers being supposed to have mystical powers, which affected medicine through the Sicilian-Italian

<sup>1</sup> On the other hand, critical days are not discussed at all in *Coan Prenotions*, the supposed repository of pre-Hippocratic Coan medicine.

## GENERAL INTRODUCTION

school. But a man so free from superstition as the author of *Epidemics I.* was unlikely to be influenced by mysticism, particularly by a mysticism which left his contemporaries apparently untouched. More probably there is an effort to express a medical truth. In malarious countries, all diseases, and not malaria only, tend to grow more severe periodically; latent malaria, in fact, colours all other complaints. May it not be that severe exacerbations and normal crises were sometimes confused by Hippocrates, or perhaps a series of malarial exacerbations attracted the crisis to one of the days composing it? The sentence in *Epidemics I.* xxvi. is very definitely to the effect that when exacerbations are on even days, crises are on even days; when exacerbations are on odd days, crises are on odd days. Evidently the critical days are not entirely independent of the periodicity of malaria.

### § 9. CHIEF DISEASES MENTIONED IN THE HIPPOCRATIC COLLECTION.

Diseases were classified by ancient physicians according to their symptoms; they are now classified according to the micro-organisms which cause them. Accordingly it often happens that no exact equivalent in Greek corresponds to an English medical term and *vice versa*. The name of a Greek disease denotes merely a syndrome of symptoms.

Perhaps the most remarkable point arising in a discussion of Greek diseases is the apparent absence of most infectious fevers. Plagues, vaguely referred to by the term *λοιμός*,<sup>1</sup> occurred at intervals, but the

<sup>1</sup> For the common Greek conception of *λοιμός* see pseudo-Aristotle *Problems I.* 7.

## GENERAL INTRODUCTION

medical writings in the Hippocratic collection are occupied almost entirely with endemic disease and do not describe plagues, not even the great plague at Athens. There is no mention of smallpox or measles; no certain reference occurs to diphtheria, scarlet fever, bubonic plague or syphilis. It is extremely doubtful whether typhoid was present in Greece, for although it is similar to severe cases of *καῦσος* and *φρενίτις*, the latter were certainly in most cases pernicious malaria, which is often so like typhoid that only the microscope can distinguish them. It is expressly stated by pseudo-Aristotle<sup>1</sup> that fevers were not infectious, and it is difficult to reconcile this statement with the prevalence of typhoid. The question must be left open, as the evidence is not clear enough to warrant a confident decision.<sup>2</sup>

Colds, "with and without fever,"<sup>3</sup> were common enough in ancient times, but whether influenza prevailed cannot be stated for certain. Its all too frequent result, pneumonia, was indeed well known, but it is puzzling that in the description of epidemic cough at Perinthus,<sup>4</sup> the nearest approach to an influenza wave in the Hippocratic collection, it is expressly stated that relapses into pneumonia were rare.<sup>5</sup>

Consumption (*φθίσις*) is one of the diseases most frequently mentioned in the *Corpus*, and it is remarkable that in the very passage where we are told

<sup>1</sup> *Problems*, VII. 8.

<sup>2</sup> See Stéphanos, *La Grèce*, p. 502.

<sup>3</sup> See *Epidemics IV.*, Littré V., p. 149.

<sup>4</sup> *Epidemics VI.*, Littré, pp. 331-337.

<sup>5</sup> *Loc. cit.*, p. 333.

## GENERAL INTRODUCTION

that fevers are not infectious it is also stated that consumption is so. To consumption are added "ophthalmias," which term will therefore include all contagious inflammations of the eyes.<sup>1</sup>

The greatest plague of the Greek and of the ancient world generally was malaria, both mild and malignant, both intermittent and remittent.

The intermittents (διαλείποντες πυρετοί) are :—

ἀμφημερινὸς πυρετός (quotidians)  
 τριταῖος πυρετός (tertians)  
 τεταρταῖος πυρετός (quartans)<sup>2</sup>

The remittents (often συνεχεῖς πυρετοί) included :—

καῦσος, so called because of the intense heat felt by the patient, a remittent tertian often mentioned in the *Corpus*.

φρενίτις, characterized by pain in the hypochondria and by delirium. It generally had a tertian periodicity.

λήθαργος, characterized by irresistible coma. It bore a strong likeness to what is now known as the comatose form of pernicious malaria.

ἡμιτριταῖος, semiteritian, was pernicious remittent malaria with tertian periodicity.<sup>3</sup>

τῦφος or τῖφος, of which five different kinds are mentioned in the Cnidian treatise περὶ τῶν ἐντὸς παθῶν

<sup>1</sup> Pseudo-Aristotle *Problems* VII. 8: διὰ τί ἀπὸ φθίσεως καὶ ὀφθαλμίας καὶ ψώρας οἱ πλησιάζοντες ἀλίσκονται· ἀπὸ δὲ ὕδρωπος καὶ πυρετῶν καὶ ἀποπληξίας οὐχ ἀλίσκονται, οὐδὲ τῶν ἄλλων ;

<sup>2</sup> See e. g. *Epidemics* I. xxiv., where quintans, septans and nonans also are mentioned. In the fourth century the existence of these fevers was denied.

<sup>3</sup> I have discussed these diseases more fully in my *Malaria and Greek History*, pp. 63–68.



## GENERAL INTRODUCTION

(Littré VII. 260 foll.), was in at least two cases a species of remittent malaria.

In connexion with the question of malaria it should be noticed that malarial cachexia, the symptoms of which are anaemia, weakness, dark complexion and enlarged spleen, is often described in the Hippocratic collection. Especially vivid is the description in *Airs Waters Places*. This is further evidence of the malarious condition of the ancient Greek world.

### μελαγχολία

This word is closely connected both with the doctrine of the humours and with the prevalence of malaria. It is fully discussed in *Malaria and Greek History*, pp. 98–101. Generally it means our “melancholia,” but sometimes merely “biliousness.” In popular speech μελαγχολία and its cognates sometimes approximate in meaning to “nervous breakdown.” Probably the name was given to any condition resembling the prostration, physical and mental, produced by malaria, one form of which (the quartan) was supposed to be caused by “black bile” (μέλαινα χολή).

### έρυσίπelas

See Foes' *Oeconomia*, p. 148, where quotations are given which enable us to distinguish έρυσίπelas from φλεγμονή. Both exhibit swelling (όγκος) and heat (θερμασία), but whereas έρυσίπelas is superficial and yellowish, φλεγμονή is internal also and red.

### διάρροια and δυσεντερία

The former is local, and causes merely the passing of unhealthy excreta. The latter is accompanied by  
lviii

## GENERAL INTRODUCTION

fever, and is a dangerous disease, in which the bowel is ulcerated, with the passing of blood. See *περὶ παθῶν* 23 and 25 (Littre VI. 234, 235), and more especially *περὶ διαίτης* 74 (Littre IV. 616):—

τοῦτο γὰρ (διάρροια) ὀνομάζεται ἕως ἂν αὐτὴ μόνῃ σαπίσῃ ἢ τροφὴ ὑποχωρῇ. ὁκόταν δὲ θερμαινόμενου τοῦ σώματος κάθαρσις δριμύς γένηται, τό τε ἔντερον ξύεται καὶ ἐλκοῦται καὶ διαχωρεῖται αἱματώδεια, τοῦτο δὲ δυσεντερία καλεῖται, νόσος χαλεπὴ καὶ ἐπικίνδυνος.

“Dysentery” would include what is now called by this name and any severe intestinal trouble, perhaps typhoid and paratyphoid if these were diseases of the Greek world, while “diarrhoea” means merely undue laxity of the bowels.

### *Delirium*

The Hippocratic collection is rich in words meaning delirium of various kinds. It is probable, if not certain, that each of them had its own associations and its own shade of meaning, but these are now to a great extent lost. Only the broad outlines of the differences between them can be discerned by the modern reader. The words fall into two main classes:—

(1) Those in which the mental derangement of delirium is the dominant idea; *e.g.* *παραφέρομαι*, *παραφρονῶ* (the word common in *Prognostic*), *παρανοῶ*, *παρακρούω* (the most common word in *Epidemics I. and III.*), *παρακοπή*, *ἐκμαίνομαι*, *μανία*.

(2) Those in which stress is laid upon delirious talk; *e.g.* *λῆρος*, *παράληρος*, *παραληρῶ*, *παραλέγω*, *λόγοι πολλοί*.

## GENERAL INTRODUCTION

It is more difficult to say exactly which words in each class signify the greater degree of delirium. Of class (1) *ἐκμαίνομαι* is obviously the most vigorous word, meaning "wild raving," *μανία* comes next to it, and *παρακοπή* is apparently slightly stronger than the others. Of class (2) *λήρος* or *παράληρος* seems to be the strongest, then *παραλέγω*, and finally *λόγοι πολλοί*.

### *Pain*

There are two common words for pain in the *Corpus*, *πόνος* and *ὀδύνη*. They seem practically synonymous. Perhaps *πόνος* is more commonly used of violent pains, and *ὀδύνη* of dull, gnawing pains, but I think that no reader would care to pronounce a confident opinion on the matter.

### *Ague*

There are two words commonly used to describe the chilly feeling experienced in fevers, especially in malarial fevers. These are (a) *ῥίγος* and its derivatives, and (b) *φρίκη* and its derivatives. The former lays stress upon the chilly feeling, the latter upon the shivering accompanying it. But in this case also it is possible to discriminate too finely; see e.g. in *Epidemics* III. Case II. (second series), *φρικώδης* is followed by *μετὰ τὸ γενόμενον ῥίγος*, referring apparently to the same occasion.

The reader should note the extreme care with which symptoms are described in the Hippocratic group of treatises. It has been pointed out, for instance, that in *Epidemics* I. Case I., and *Epidemics* III. Case xv. (second series), there are possibly

## GENERAL INTRODUCTION

instances of Cheyne-Stokes breathing. Noticed by the writer of these works, this important symptom was overlooked until the eighteenth century.

### § 10. *πολύς* AND *ὀλίγος* IN THE PLURAL.

It is at least curious that one of the translator's greatest difficulties is to decide what are the meanings of *πολύς* and *ὀλίγος* (also of *σμικρά*) when used in the plural. The reader is at first sight inclined to think that *ρεύματα πολλά* (*Epidemics* III. iv.) means "many fluxes," and so possibly it may. But just above we have *ρεύμα πολύ*, "a copious flux," and so the plural may well mean "copious fluxes." The ambiguity becomes more serious when the words are applied to the excreta. Is frequency or quantity the more dominant idea? It seems impossible to say for certain, but the evidence tends towards the latter view. From *Prognostic* Chapter XI it seems that quantity is the more important thing, and in the same passage *πυκνόν* is the word used to denote frequency. The usage in *Epidemics* I. and III. bears out this view. "Frequently shivering" is *φρικώδεις πυκνά* (*Epid.* III. xiii.). In the same chapter occurs the sentence, *αἱ δὲ βήχες ἐνῆσαν μὲν διὰ τέλους πολλαί, καὶ πολλὰ ἀνάγουσαι πέποινα*, where *πολλαί* means "many" and *πολλά* "copious." In *Epid.* III. Case II. (second series) *βήχες συνεχῆς ὑγραί πολλαί* means "continued coughing with watery and copious sputa." In Case IX. of the same series "frequent, slight epistaxis" is *ἡμορραγίαι . . . πυκνὰ κατ' ὀλίγον*. After long consideration of this difficult question I conclude that *πολύς* and *ὀλίγος* in the plural, when

## GENERAL INTRODUCTION

used of excreta, etc., should be translated "copious" or "abundant" unless the context makes the other meaning absolutely necessary.

The case is somewhat similar with the word *σμικρά*. Used adverbially this word means "slightly," "a little," more often than it does "in small quantities." *σμικρὰ κατενόει* is almost certainly "lucid intervals," and *σμικρὰ ἐκοιμήθη* is "snatches of sleep," but I do not feel sure that *σμικρὰ παρέκρουσε* means more than "slight delirium," nor *σμικρὰ ἐπύρεξε* (*Epid.* III. XIII.) more than "slightly feverish."

### § 11. THE IONIC DIALECT OF THE HIPPOCRATIC COLLECTION.

The later MSS. of the *Corpus* exhibit a mass of pseudo-ionic forms which are not to be found, or are only rarely found, in the earlier MSS. The uncontracted forms, too, are more common in the later authorities. If we follow closely the earlier MSS. we have a text which is very like Attic, with a mild sprinkling of Ionic forms. These facts seem to show that, when Ionic became the medium of scientific prose, it lost touch gradually with the spoken speech and assimilated itself to the predominant Attic, and later on possibly to the *κοινή*. It retained just enough Ionic to keep up the tradition and to conform to convention. The later scribes, under the mistaken impression that the texts before them had been atticized, restored what they considered to be the ancient forms, often with disastrous results. Many of their ionisms are sheer monstrosities.

In 1894 A. W. Smyth discussed the dialect of the *Corpus* in his work *The Sounds and Inflections of the* Ixii

## GENERAL INTRODUCTION

*Greek Dialects : Ionic.*<sup>1</sup> He pointed out, however, that the labours of Littré<sup>2</sup> had left much to be done in this department of Hippocratic study, and that the material for a sound judgment was not yet available.

The collection of this material is not yet complete, but a good start was made by Kühlewein, who in Chapter III of the *Prolegomena* to the first volume of the Teubner Hippocrates (*de dialecto Hippocratica*)<sup>3</sup> laid down the principles followed in the present edition.

### § 12. MANUSCRIPTS.

None of our MSS. are very old, but the oldest are far superior to the later, both in readings and in dialect. There is no regular canon, and no recognized order; each independent MS. seems to represent a different "collection" of Hippocratic works. This fact fits in well with the theory that the nucleus of the *Corpus* was the library (or the remains of it) of the Hippocratic medical school at Cos.

θ Vindobonensis med. IV., tenth century. Our oldest MS., containing: *περὶ τῶν ἐντος παθῶν. περὶ παθῶν. περὶ ἱερῆς νούσου. περὶ νούσων ᾱ. περὶ νούσων γ̄ περὶ νούσων β̄. περὶ διαίτης ᾱ. περὶ διαίτης β̄. περὶ διαίτης γ̄* (with *περὶ ἐνυπνίων*). *περὶ γυναικείων ᾱ. περὶ γυναικείων β̄. περὶ γυναικείης φύσιος.* Of some books parts are missing.

A Parisinus 2253, eleventh century. It contains:

<sup>1</sup> See §§ 94-103, pp. 100-110.

<sup>2</sup> See Vol. I., 479-502.

<sup>3</sup> pp. lxxv-cxxviii.

## GENERAL INTRODUCTION

Κωακαὶ προγνώσεις. περὶ τροφῆς. περὶ πτισάνης. περὶ χυμῶν. περὶ ὑγρῶν χρήσιος. ἐπιβώμιος. περὶ τέχνης. περὶ φύσιος ἀνθρώπου. περὶ φυσῶν. περὶ τόπων τῶν κατὰ ἄνθρωπον. περὶ ἀρχαίης ιητρικῆς. ἐπιδημιῶν α̅. An excellent MS., the use of which has transformed our Hippocratic text. There are four or five correcting hands.

B Laurentianus 74, 7, eleventh or twelfth century. It contains: κατ' ιητρείον. περὶ ἀγμῶν. περὶ ἄρθρων. περὶ τῶν ἐν κεφαλῇ τρωμάτων. Two correcting hands.

V Vaticanus graecus 276, twelfth century. It contains: ὄρκος. νόμος. ἀφορισμοί. προγνωστικόν. περὶ διαίτης ὀξέων. κατ' ιητρείον. περὶ ἀγμῶν. περὶ ἄρθρων. περὶ τῶν ἐν κεφαλῇ τρωμάτων. περὶ ἀέρων, ὑδάτων, τόπων. ἐπιδημιῶν α̅β̅γ̅δε̅ζ̅ξ̅. περὶ φύσεως ἀνθρώπου. περὶ φύσεως παιδίου. περὶ γονῆς. περὶ ἐπικνήσεως. περὶ ἐπταμήνου. περὶ ὀκταμήνου. περὶ παρθένων. περὶ γυναικείης φύσιος. περὶ ὀδοντοφυΐας. περὶ τόπων τῶν κατὰ ἄνθρωπον. γυναικείων α̅β̅. περὶ ἀφόρων. περὶ ἐπικνήσιος (again). περὶ ἐγκατατομῆς παιδίου. περὶ ιητροῦ. περὶ κρίσεων. περὶ κραδίης. περὶ σαρκῶν. περὶ ἀδένων οὐλομελίας. περὶ ἀνατομῆς. ἐπιστολαί. δόγμα Ἀθηναίων. ἐπιβώμιος. πρεσβευτικός.

M Marcianus Venetus 269, eleventh century. It contains: ὄρκος. νόμος. περὶ τέχνης. περὶ ἀρχαίης ιητρικῆς. παραγγελίαι. περὶ εὐσχημοσύνης. περὶ φύσεως ἀνθρώπου. περὶ γονῆς. περὶ φύσεως παιδίου. περὶ ἄρθρων. περὶ χυμῶν. περὶ τροφῆς. περὶ ἐλκῶν. περὶ ἱερῆς νούσου. περὶ νούσων α̅. περὶ νούσων β̅. περὶ νούσων γ̅. περὶ νούσων δ̅. περὶ παθῶν. περὶ τῶν ἐντὸς παθῶν. περὶ διαίτης α̅. περὶ διαίτης β̅. περὶ διαίτης γ̅. περὶ ἐνυπνίων. περὶ ὄψιος. περὶ κρισίμων. ἀφορισμοί. προγνωστικόν. περὶ διαίτης ὀξέων. περὶ φυσῶν. μοχλικόν. περὶ ὀστέων φύσιος. περὶ ἀγμῶν.

## • GENERAL INTRODUCTION

κατ' ἰητρείον. περὶ ἐγκατατομῆς ἐμβρύου. περὶ γυναι-  
κείων α. περὶ γυναικείων β. περὶ ἀφόρων. περὶ ἐπι-  
κυσίος. περὶ ἐπταμήνου. περὶ ὀκταμήνου. περὶ  
παρθενίων. περὶ γυναικείης φύσεως. Part of ἐπιδημιῶν α.  
ἐπιδημιῶν β. ἐπιδημιῶν γ. ἐπιστολαί. ὁ περὶ μανίης  
λόγος. δόγμα Ἀθηναίων. πρεσβευτικός (mutilated).

C' Paris 446 suppl. Tenth century.

D Paris 2254

E Paris 2255 } Fourteenth century.

F Paris 2144 }

H Paris 2142. Thirteenth century.

I Paris 2140 }

J Paris 2143 }

K Paris 2145 } Fourteenth century.

S' Paris 2276 }

R' Paris 2165. Sixteenth century.

℞ Barberinus I. 5. Fifteenth century.

### § 13. CHIEF EDITIONS AND TRANSLATIONS, ETC., OF THE HIPPOCRATIC CORPUS.

1525 Hippocratis Coi medicorum longe principis  
octoginta volumina, quibus maxima ex parte an-  
norum circiter duo millia latina caruit lingua, Graeci  
vero, Arabes et prisci nostri medici, plurimis tamen  
utilibus praetermissis, scripta sua illustrarunt, nunc  
tandem per M. Fabium Calvum, Rhavennatem,  
virum undecumque doctissimum, latinitate donata,  
Clementi VII pont. max. dicata, ac nunc primum  
in lucem edita, quo nihil humano generi salubrius  
fieri potuit.

Romae ex aedibus Francisci Minitii Calvi Novo-  
comensis. 1 vol. fol.

1526 Ἀπαντα τὰ τοῦ Ἱπποκράτους. Omnia opera  
lxx



## GENERAL INTRODUCTION

Hippocratis. Venetiis in aedibus Aldi et Andreae Ansulani soceri. Fol.

1538 Ἱπποκράτους Κόου ἱατροῦ παλαιοτάτου πάντων ἄλλων κορυφαίου βιβλία ἅπαντα. Hippocratis Coi medici vetustissimi, et omnium aliorum principis, libri omnes ad vetustos codices summo studio collati et restaurati. Froben, Basileae. Fol.

This edition was edited by Janus Cornarius.

1545 Hippocratis Coi medicorum omnium facile principis opera quae extant omnia. Iano Cornario medico physico interprete. Venet. Oct. Apud I. Gryphium.

1588 Hippocratis Coi opera quae extant, graece et latine veterum codicum collatione restituta, novo ordine in quatuor classes digesta, interpretationis latinae emendatione et scholiis illustrata ab Hieron. Mercuriali Foroliviensi. Venetiis industria ac sump-tibus Juntarum. Fol.

1588 Oeconomia Hippocratis alphabeti serie distincta, Anutio Foesio authore. Francofurti. Fol.

1595 Τοῦ μεγάλου Ἱπποκράτους πάντων τῶν ἱατρῶν κορυφαίου τὰ εὑρισκόμενα.

Magni Hippocratis medicorum omnium facile principis opera omnia quae extant in VIII sectiones ex Erotiani mente distributa, nunc recens latina interpretatione et annotationibus illustrata, Anutio Foesio Mediomatrico medico authore. Francofurti apud Andreae Wecheli haeredes. Fol.

Reprinted 1621, 1624, 1645 and at Geneva 1657.

1665 Magni Hippocratis Coi opera omnia graece et latine edita et ad omnes alias editiones accommodata industria et diligentia Joan. Antonidae van der Linden. Lugduno-Batav. 1665. 2 vol. octavo.

1679 Hippocratis Coi et Claudii Galeni Pergameni  
lxvi

## GENERAL INTRODUCTION

ἀρχιατρῶν opera. Renatus Charterius Vindocinensis, plurima interpretatus, universa emendavit, instauravit, notavit, auxit . . . Lutetiae Parisiorum, apud Jacobum Villery. 13 vol. fol.

1743 Τὰ Ἱπποκράτους ἅπαντα . . . studio et opera Stephani Mackii. Viennae. 2 vol. fol.

1825 Τοῦ μεγάλου Ἱπποκράτους ἅπαντα. Magni Hippocratis opera omnia. Editionem curavit D. Carolus Gottlob Kühn. Lipsiae. 3 vol. octavo.

1834 Scholia in Hippocratem et Galenum, F. R. Dietz. 2 vols.

1839–1861 Œuvres complètes d'Hippocrate, traduction nouvelle, avec le texte grec en regard . . . Par. É. Littré. Paris. 10 vol.

1846 Article "Hippocrates" in *Smith's Dictionary of Greek and Roman Biography and Mythology*, by Dr. W. A. Greenhill.

1849 The genuine works of Hippocrates translated from the Greek with a preliminary Discourse and Annotations by Francis Adams. London. 2 vol.

1859–1864 Hippocratis et aliorum medicorum veterum reliquiae. Edidit Franciscus Zacharias Ermerins. Trajecti ad Rhenum. 3 vol.

1864–1866 Ἱπποκράτης κομιδῇ Car. H. Th. Reinhold. Ἀθήνησι. 2 vol.

1877, 1878 Chirurgie d'Hippocrate, par J. E. Pétrequin. 2 vols.

1894 Hippocratis opera quae geruntur omnia. Recensuit Hugo Kühlewein. Prolegomena conscripserunt Ioannes Ilberg et Hugo Kühlewein.

The second volume appeared in 1902.

1913 Article "Hippokrates (16)" in Pauly-Wissowa *Real-Encyclopädie der classischen Altertumswissenschaft* l.

## GENERAL INTRODUCTION

The early editions are learned but uncritical, being stronger on the medical side than in scholarship. Special mention should be made of the *Oeconomia* of Foes, a perfect mine of medical lore, and it is supplemented by the excellent notes in Foes' edition. Such a work could have appeared only in an age when Hippocrates was a real force in medical practice.<sup>1</sup>

The first scholarly edition was that of Littré, and only those who have seriously studied the works of Hippocrates can appreciate the debt we owe to his diligence, or understand why the task occupied twenty-two years. Unfortunately Littré is diffuse, and not always accurate. His opinions, too, changed during the long period of preparation, and the additional notes in the later volumes must be consulted in order to correct the views expressed in the earlier.

As a textual critic he shows much common sense, but his notes are awkward to read, and his knowledge was practically confined to the Paris MSS.

He is at his best as a medical commentator, and he was the first to explain Hippocratic pathology by proving that the endemic diseases of the Hippocratic writings must be identified, not with the fevers of our climate, but with the remittent forms of malaria common in hot climates. It is not too much to say that without keeping this fact in view we cannot understand a great part of the *Corpus*. It is curious to note that Hippocrates was a medical text-book almost down to the time (about 1840)

<sup>1</sup> This is in a way a defect. Foes, like Galen, is not sufficiently "detached" from Hippocratic teaching to judge Hippocrates impartially.

## GENERAL INTRODUCTION

when malaria ceased to be a real danger to northern Europe.

The most useful critical edition of Hippocrates is that of Ermerins. He was a scholar with a lucid and precise mind, and his critical notes are a pleasure to read. The introductions, too, are stimulating, instructive and interesting, written in a style full of life and charm. As a philologist he was very deficient.

The edition in the Teubner series, edited by Kühlewein, of which two volumes have appeared, marks a distinct advance. Fresh manuscripts have been collated, and the text has been purged of the pseudo-ionisms which have so long disfigured it.

A word should perhaps be said about Reinhold, whose two volumes of text give us more plausible conjectures than the work of any other scholar.

Of the scholars who have worked at parts of the *Corpus* mention should be made of Gomperz and Wilamowitz, but especial praise is due to the remarkable acuteness of Coray, whose intellect was like a sword. He always instructs and inspires, even when the reader cannot accept his emendations.

Adams' well-known translation is the work of a man of sense, who loved his author and was not without some of the qualifications of a scholar. The translation is literal and generally good, but is occasionally misleading. The medical annotation is far superior to the scholarship displayed in the work.

# AIRS   WATERS   PLACES

**VOL. I.**

**F**

## INTRODUCTION

No ancient critic appears to have doubted the authenticity of this work, and only Haller among the moderns has rejected it.

It is divided roughly into two parts. The first (Chapters I–XI) deals chiefly with the effects of climate and situation upon health; the second (XII–XXIV) deals chiefly with the effects of climate upon character. At the end of XII a portion has been lost dealing with the Egyptians and Libyans.

The style of the book has the dignified restraint which we associate with the Hippocratic group of treatises. In tone it is strikingly dogmatic, conclusions being enunciated without the evidence upon which they are based. Modern physicians are sceptical about many of these conclusions while fully recognizing the value of the principle that geographical conditions and climate influence health.

The second part of the work is scarcely medical at all, but rather ethnographical. It bears a close resemblance to certain parts of Herodotus, but lacks the graceful *bonhomie* which is so characteristic of the latter writer. Indeed it is hard not to see a close connection between the account of the impotent effeminates of Chapter XXII and the *ἐνάρες* of Herodotus I. 105.

## INTRODUCTION

### MSS. AND EDITIONS.

THE chief MSS. are V and **B**, the latter being a fifteenth-century MS. at Rome called *Codex Barberinus*. To these must be added the readings of a MS. called by Kühlewein b, which is now lost, but its readings have been noted by Gadaldinus of Venice. There are two Paris MSS. worth noticing. One (2255 or E) divides the treatise into two parts, and the other (7027) is a Latin translation which sometimes helps in the reconstruction of the text.

The work has often been edited. The earliest edition was published at Venice in 1497, and there were at least ten others during the sixteenth century.<sup>1</sup> The best edition is that of Coray (2 vols., Paris, 1800). Though verbose it is both scholarly and medically accurate, Coray being a Greek by birth, a medical man by training, and a scholar by inclination.

There are English translations by Peter Low (London, 1597), John Moffat (London, 1788), Francis Clifton (London, 1734), and, of course, Francis Adams (London, 1849).

The following table, taken from Aetius III. 164, may prove useful in determining the periods of the year mentioned in the Hippocratic writings.

March 23 . . .	ισημερία ἐαρινή.
April 1 . . .	αἱ πληιάδες ἀκρόνυχτοι φαίνονται.
April 19 . . .	αἱ πληιάδες ἐσπέριοι κρύπτονται.
April 21 . . .	αἱ πληιάδες ἄμα ἡλίου ἀνατολῇ ἐπιτέλλουσι.
May 7 . . .	αἱ πληιάδες ἑῷαι φαίνονται (heliacal rising).

<sup>1</sup> See Littré, II. 9, 10.

## INTRODUCTION

June 6 . . .	ἀρκτοῦρος δύνει.
June 25 . . .	τροπαὶ θεριναί.
July 19 . . .	ὁ κύων ἔως ἐπιτέλλει.
September 17	ἀρκτοῦρος ἐπιτέλλει (heliacal rising).
September 25	ἰσημερία φθινοπωρινή.
November 6	αἱ πληάδες ἔφαι δύνουσι (cosmic setting).
December 23	τροπαὶ χειμεριναί.
February 25	ἀρκτοῦρος ἑσπέριος ἐπιτέλλει καὶ (26) χελιδόνες πέτονται καὶ φαίνονται.

Spring began with the equinox, but was often popularly dated from the appearance of swallows and the acronychal rising of Arcturus in February. The heliacal rising of the Pleiades marked the beginning of summer, which ended with that of Arcturus, an event nearly coinciding with the autumnal equinox. Finally, winter began with the cosmic setting of the Pleiades.

A star is said to rise heliacally when it gets far enough in front of the sun to be visible before dawn. It sets cosmically when it gets so much further in advance as to be first seen setting in the west before dawn. The acronychal is the evening rising of a star, when it is visible all night, and contrasts with the heliacal, or morning, rising, when it soon disappears in the sun's rays.

Galen, in his commentary on the third section of *Aphorisms*, implies that there are two meanings of μεταβολαὶ τῶν ὥρέων, a common term in *Airs Waters Places* :

(1) the actual changes from season to season ;



## INTRODUCTION

- (2) sharp contrasts of weather during the seasons.

It is clear from the passages in *Airs Waters Places* where the phrase occurs that it may have either meaning. The notion underlying it is that of violent change in the weather.

The reader should note the meanings of the following :

- (1) "between the winter rising of the sun and the winter setting," *i. e.* roughly E.S.E. to W.S.W. ;
- (2) "between the summer setting and the summer rising," *i. e.* roughly W.N.W. to E.N.E. ;
- (3) "between the summer and winter risings," *i. e.* roughly E.N.E. to E.S.E.

The exact number of degrees is a question of latitude. The directions given above are roughly correct for the Mediterranean area.



## ΠΕΡΙ ΑΕΡΩΝ ΥΔΑΤΩΝ ΤΟΠΩΝ

- Ἰητρικὴν ὅστις βούλεται ὀρθῶς ζητεῖν, τάδε  
χρὴ ποιεῖν· πρῶτον μὲν ἐνθυμείσθαι τὰς ὥρας  
τοῦ ἔτεος, ὃ τι δύναται ἀπεργάζεσθαι ἐκάστη·  
οὐ γὰρ εἰκόασιν ἀλλήλοισιν οὐδέν, ἀλλὰ πολὺ  
διαφέρουσιν αὐταί τε ἐφ' ἐωυτέων καὶ ἐν τῇσι  
μεταβολῇσιν· ἔπειτα δὲ τὰ πνεύματα τὰ θερμά  
τε καὶ τὰ ψυχρά, μάλιστα μὲν τὰ κοινὰ πᾶσιν  
ἀνθρώποισιν, ἔπειτα δὲ καὶ τὰ ἐν ἐκάστη χώρῃ  
ἐπιχώρια ἑόντα. δεῖ δὲ καὶ τῶν ὑδάτων ἐνθυ-  
10 μείσθαι τὰς δυνάμεις· ὥσπερ γὰρ ἐν τῷ στόματι  
διαφέρουσι καὶ ἐν τῷ σταθμῷ, οὕτω καὶ ἡ δύναμις  
διαφέρει πολὺ ἐκάστου. ὥστε ἐς πόλιν ἐπειδὴν  
ἀφίκηται τις, ἥς ἄπειρός ἐστι, διαφροντίσαι χρὴ  
τὴν θέσιν αὐτῆς, ὅπως κείται καὶ πρὸς τὰ πνεύ-  
ματα καὶ πρὸς τὰς ἀνατολὰς τοῦ ἡλίου. οὐ γὰρ  
τῷτὸ δύναται ἥτις πρὸς βορέην κείται καὶ ἥτις  
πρὸς νότον οὐδ' ἥτις πρὸς ἡλίον ἀνίσχοντα οὐδ'  
ἥτις πρὸς δύνοντα. ταῦτα δὲ χρὴ<sup>1</sup> ἐνθυμείσθαι  
ὡς κάλλιστα καὶ τῶν ὑδάτων πέρι ὡς ἔχουσι,  
20 καὶ πότερον ἐλώδεσι χρέονται καὶ μαλθακοῖσιν  
ἢ σκληροῖσί τε καὶ ἐκ μετεώρων καὶ πετρωδέων  
εἴτε ἀλυκοῖσι καὶ ἀτεράμνοισιν· καὶ τὴν γῆν,  
πότερον ψιλή τε καὶ ἄνυδρος ἢ δασεῖα καὶ  
ἔφυδρος καὶ εἴτε ἔγκοιλός ἐστι καὶ πνιγερὴ εἴτε  
μετέωρος καὶ ψυχρὴ καὶ τὴν δίαιταν τῶν ἀνθρώ-  
πων, ὁκοίη ἡδονται, πότερον φιλοπόται καὶ  
70

## AIRS WATERS PLACES

WHOEVER wishes to pursue properly the science of medicine must proceed thus. First he ought to consider what effects each season of the year can produce; for the seasons are not at all alike, but differ widely both in themselves and at their changes. The next point is the hot winds and the cold, especially those that are universal, but also those that are peculiar to each particular region. He must also consider the properties of the waters; for as these differ in taste and in weight, so the property of each is far different from that of any other. Therefore, on arrival at a town with which he is unfamiliar, a physician should examine its position with respect to the winds and to the risings of the sun. For a northern, a southern, an eastern, and a western aspect has each its own individual property. He must consider with the greatest care both these things and how the natives are off for water, whether they use marshy, soft waters, or such as are hard and come from rocky heights, or brackish and harsh. The soil too, whether bare and dry or wooded and watered, hollow and hot or high and cold. The mode of life also of the inhabitants that is pleasing to them, whether they

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<sup>1</sup>  $\chi\rho\eta$  b: omitted in other MSS.

ἀριστηταὶ καὶ ἀταλαίπωροι ἢ φιλογυμνασταὶ τε  
28 καὶ φιλόπονοι καὶ ἐδωδοὶ καὶ ἄποτοι.

II. Καὶ ἀπὸ τούτων χρὴ ἐνθυμείσθαι ἕκαστα.  
εἰ γὰρ ταῦτα εἰδείη τις καλῶς, μάλιστα μὲν  
πάντα, εἰ δὲ μή, τά γε πλείστα, οὐκ ἂν αὐτὸν  
λανθάνοι ἐς πόλιν ἀφικνεόμενον, ἥς ἂν ἄπειρος  
ᾗ, οὔτε νοσήματα ἐπιχώρια οὔτε τῶν κοινῶν ἢ  
φύσις, ὁκοίη τίς ἐστίν· ὥστε μὴ ἀπορεῖσθαι ἐν  
τῇ θεραπείᾳ τῶν νούσων μηδὲ διαμαρτάνειν· ἃ  
εἰκὸς ἐστὶ γίνεσθαι, ἣν μὴ τις ταῦτα πρότερον  
εἰδὼς προφροντίσῃ περὶ ἐκάστου· τοῦ δὲ χρόνου  
10 προϊόντος καὶ τοῦ ἐνιαυτοῦ λέγοι ἂν, ὅκόσα τε  
νοσήματα μέλλει πάγκοινα τὴν πόλιν κατασχέ-  
σειν ἢ θέρεος ἢ χειμῶνος, ὅκόσα τε ἴδια ἐκάστῳ  
κίνδυνος γίνεσθαι ἐκ μεταβολῆς τῆς διαίτης.  
εἰδὼς γὰρ τῶν ὥρέων τὰς μεταβολὰς καὶ τῶν  
ἄστρον τὰς<sup>1</sup> ἐπιτολάς τε καὶ δύσιας, καθότι  
ἕκαστον τούτων γίνεται, προειδείη ἂν τὸ ἔτος  
ὁκοῖόν τι μέλλει γίνεσθαι. οὕτως ἂν τις ἐννοεύ-  
μενος καὶ προγινώσκων τοὺς καιροὺς μάλιστ' ἂν  
εἰδείη περὶ ἐκάστου καὶ τὰ πλείστα τυγχάνοι  
20 τῆς ὑγιείης καὶ κατορθοίᾳ οὐκ ἐλάχιστα ἐν τῇ  
τέχνῃ. εἰ δὲ δοκέοι τις ταῦτα μετεωρολόγια εἶναι,  
εἰ μετασταίῃ τῆς γνώμης, μάθοι ἂν, ὅτι οὐκ ἐλά-  
χιστον μέρος συμβάλλεται ἀστρονομίᾳ ἐς ἱητρι-  
κὴν, ἀλλὰ πάννυ πλείστον. ἅμα γὰρ τῇσιν ὥρησι  
καὶ αἱ νοῦσοι καὶ αἱ κοιλίαι μεταβάλλουσιν  
26 τοῖσιν ἀνθρώποισιν.

III. Ὅκως δὲ χρὴ ἕκαστα τῶν προειρημένων  
σκοπεῖν καὶ βασανίζειν, ἐγὼ φράσω σαφέως.

<sup>1</sup> τὰς added by Wilamowitz.

## AIRS WATERS PLACES, I.—III.

are heavy drinkers, taking lunch,<sup>1</sup> and inactive, or athletic, industrious, eating much and drinking little.

II. Using this evidence he must examine the several problems that arise. For if a physician know these things well, by preference all of them, but at any rate most, he will not, on arrival at a town with which he is unfamiliar, be ignorant of the local diseases, or of the nature of those that commonly prevail; so that he will not be at a loss in the treatment of diseases, or make blunders, as is likely to be the case if he have not this knowledge before he consider his several problems. As time and the year passes he will be able to tell what epidemic diseases will attack the city either in summer or in winter, as well as those peculiar to the individual which are likely to occur through change in mode of life. For knowing the changes of the seasons, and the risings and settings of the stars, with the circumstances of each of these phenomena, he will know beforehand the nature of the year that is coming. Through these considerations and by learning the times beforehand, he will have full knowledge of each particular case, will succeed best in securing health, and will achieve the greatest triumphs in the practice of his art. If it be thought that all this belongs to meteorology, he will find out, on second thoughts, that the contribution of astronomy to medicine is not a very small one but a very great one indeed. For with the seasons men's diseases, like their digestive organs, suffer change.

III. I will now set forth clearly how each of the foregoing questions ought to be investigated, and

<sup>1</sup> That is, taking more than one full meal every day.

- ἥτις μὲν πόλις πρὸς τὰ πνεύματα κεῖται τὰ θερμά  
 —ταῦτα δ' ἐστὶ μεταξύ τῆς τε χειμερινῆς ἀνα-  
 τολῆς τοῦ ἡλίου καὶ τῶν δυσμέων τῶν χειμερινῶν  
 —καὶ αὐτῇ ταῦτα τὰ πνεύματά ἐστι σύννομα,  
 τῶν δὲ ἀπὸ τῶν ἄρκτων πνευμάτων σκέπη, ἐν  
 ταύτῃ τῇ πόλει ἐστὶ τὰ τε ὕδατα πολλὰ καὶ  
 ὕφαλα,<sup>1</sup> καὶ ἀνάγκη εἶναι μετέωρα, τοῦ μὲν θέρεος  
 10 θερμά, τοῦ δὲ χειμῶνος ψυχρά· τοὺς τε ἀνθρώ-  
 πους τὰς κεφαλὰς ὑγρὰς ἔχειν καὶ φλεγματώδεας,  
 τὰς τε κοιλίας αὐτῶν πυκνὰ ἐκταράσσεσθαι ἀπὸ  
 τῆς κεφαλῆς τοῦ φλέγματος ἐπικαταρρέοντος· τὰ  
 τε εἶδεα ἐπὶ τὸ πλήθος αὐτῶν ἀτονώτερα εἶναι·  
 ἐσθίειν δ' οὐκ ἀγαθοὺς εἶναι οὐδὲ πίνειν. ὁκόσοι  
 μὲν γὰρ κεφαλὰς ἀσθενέας ἔχουσιν, οὐκ ἂν εἴησαν  
 ἀγαθοὶ πίνειν· ἡ γὰρ κραιπάλῃ μᾶλλον πιέζει.  
 νοσήματά τε τάδε ἐπιχώρια εἶναι· πρῶτον μὲν  
 τὰς γυναῖκας νοσερὰς καὶ ῥοώδεας εἶναι· ἔπειτα  
 20 πολλὰς ἀτόκους ὑπὸ νοῦσου καὶ οὐ φύσει ἐκτιτρώ-  
 σκεσθαί τε πυκνά· τοῖσί τε παιδίοισιν ἐπιπίπτειν  
 σπασμούς τε καὶ ἄσθματα καὶ ἃ νομίζουσι τὸ  
 παιδίον<sup>2</sup> ποιεῖν καὶ ἱερὴν νοῦσον εἶναι· τοῖσι δὲ  
 ἀνδράσι δυσεντερίας καὶ διαρροίας καὶ ἡπιάλους  
 καὶ πυρετοὺς πολυχρονίους χειμερινοὺς καὶ ἐπι-  
 νυκτίδας πολλὰς καὶ αἰμορροΐδας ἐν τῇ ἔδρῃ.  
 πλευρίτιδες δὲ καὶ περιπνευμονίαι καὶ καῦσοι  
 καὶ ὁκόσα ὀξέα νοσήματα νομίζονται εἶναι οὐκ  
 ἐγγίνονται πολλά. οὐ γὰρ οἷόν τε, ὅκου ἂν  
 30 κοιλίαι ὑγραὶ ἔωσι, τὰς νοῦσους ταύτας ἰσχύειν.  
 ὀφθαλμίαι τε ἐγγίνονται ὑγραὶ καὶ οὐ χαλεπαί,

<sup>1</sup> Perhaps one should read ὕφαλυκά.

<sup>2</sup> παιδίον MSS. : θεῖον Coray, who reads θ for ἀ, and Zwinger in margin.

### AIRS WATERS PLACES, III.

the tests to be applied. A city that lies exposed to the hot winds—these are those between the winter rising of the sun and its winter setting—when subject to these and sheltered from the north winds, the waters here are plentiful and brackish, and must be near the surface,<sup>1</sup> hot in summer and cold in winter. The heads of the inhabitants are moist and full of phlegm, and their digestive organs are frequently deranged from the phlegm that runs down into them from the head. Most of them have a rather flabby physique, and they are poor eaters and poor drinkers. For men with weak heads will be poor drinkers, as the after-effects are more distressing to them. The endemic diseases are these. In the first place, the women are unhealthy and subject to excessive fluxes. Then many are barren through disease and not by nature, while abortions are frequent. Children are liable to convulsions and asthma, and to what they think causes the disease of childhood, and to be a sacred disease.<sup>2</sup> Men suffer from dysentery, diarrhoea, ague, chronic fevers in winter, many attacks<sup>3</sup> of eczema, and from hemorrhoids. Cases of pleurisy, pneumonia, ardent fever, and of diseases considered acute, rarely occur. These diseases cannot prevail where the bowels are loose. Inflammations of the eyes occur with running, but are not

<sup>1</sup> *μετέωρος* "elevated," both here and in Chapter XXIV, seems, when applied to springs, to mean the opposite of "deep," *i. e.* rising from a point near the surface of the soil. Contrast Chapter VII, where water *ἐκ βαθυτάτων πηγῶν* is said to be warm in winter and cool in summer.

<sup>2</sup> That is, epilepsy. Coray's reading means, "that affection which they think is caused by Heaven, and to be sacred."

<sup>3</sup> Or "forms."



## ΠΕΡΙ ΑΕΡΩΝ ΥΔΑΤΩΝ ΤΟΠΩΝ

ὀλιγοχρόνιοι, ἣν μὴ τι κατάσχη νόσημα πάγκοι-  
νον ἐκ μεταβολῆς μεγάλης.<sup>1</sup> καὶ ὁκόταν τὰ  
πεντήκοντα ἔτεα ὑπερβάλωσι,<sup>2</sup> κατάρροοι ἐπι-  
γενόμενοι ἐκ τοῦ ἐγκεφάλου παραπληκτικούς  
ποιέουσι τοὺς ἀνθρώπους, ὁκόταν ἐξαίφνης ἡλιω-  
θέωσι τὴν κεφαλὴν ἢ ῥιγώσωσι. ταῦτα μὲν τὰ  
νοσήματα αὐτοῖσιν ἐπιχώριά ἐστι. χωρὶς δέ,  
ἣν τι πάγκοινον κατάσχη νόσημα ἐκ μεταβολῆς  
40 τῶν ὥρέων, καὶ τούτου μετέχουσιν.

IV. Ὅκόσαι δ' ἀντικέονται τούτων πρὸς τὰ  
πνεύματα τὰ ψυχρὰ τὰ μεταξὺ τῶν δυσμέων τῶν  
θερινῶν τοῦ ἡλίου καὶ τῆς ἀνατολῆς τῆς θερινῆς,  
καὶ αὐτῇσι ταῦτα τὰ πνεύματα ἐπιχώριά ἐστι,  
τοῦ δὲ νότου καὶ τῶν θερμῶν πνευμάτων σκέπη,  
ὧδε ἔχει περὶ τῶν πολίων τούτων· πρῶτον μὲν  
τὰ ὕδατα σκληρά τε καὶ ψυχρὰ ὥς ἐπὶ τὸ  
πλήθος ἐγγίνεται.<sup>3</sup> τοὺς δὲ ἀνθρώπους εὐτόνους  
τε καὶ σκελιφροὺς ἀνάγκη εἶναι, τοὺς τε πλείους  
10 τὰς κοιλίας ἀτεράμνους ἔχειν καὶ σκληρὰς τὰς  
κάτω, τὰς δὲ ἄνω εὐρωτέρας· χολώδεάς τε  
μᾶλλον ἢ φλεγματίας εἶναι. τὰς δὲ κεφαλὰς  
ὑγιερὰς ἔχουσι καὶ σκληράς· ῥηγματίαι τέ εἰσιν  
ἐπὶ τὸ πλήθος. νοσεύματα δὲ αὐτοῖσιν ἐπιδημεῖ  
τάδε· πλευρίτιδές τε πολλαὶ αἷ τε ὀξείαι νομιζό-  
μεναι νοῦσοι. ἀνάγκη δὲ ὧδε ἔχειν, ὁκόταν αἱ  
κοιλίαι σκληραὶ ἔωσιν· ἔμπυοί τε πολλοὶ γίνονται  
ἀπὸ πάσης προφάσιος. τούτου δὲ αἰτιὸν ἐστι  
τοῦ σώματος ἡ ἔντασις καὶ ἡ σκληρότης τῆς  
20 κοιλίης. ἡ γὰρ ξηρότης ῥηγματίας ποιεῖ εἶναι  
καὶ τοῦ ὕδατος ἡ ψυχρότης. ἐδωδούς δὲ ἀνάγκη

<sup>1</sup> μεγάλης omitted by Greek MSS.: *de magna metabula*  
7027.

### AIRS WATERS PLACES, III.-IV.

serious; they are of short duration, unless a general epidemic take place after a violent change. When they are more than fifty years old, they are paralyzed by catarrhs supervening from the brain, when the sun suddenly strikes their head or they are chilled. These are their endemic diseases, but besides, they are liable to any epidemic disease that prevails through the change of the seasons.

IV. But the following is the condition of cities with the opposite situation, facing the cold winds that blow from between the summer setting and the summer rising of the sun, being habitually exposed to these winds, but sheltered from the hot winds and from the south. First, the waters of the region are generally hard and cold. The natives must be sinewy and spare, and in most cases their digestive organs are costive and hard in their lower parts, but more relaxed in the upper. They must be bilious rather than phlegmatic. Their heads are healthy and hard, but they have in most cases a tendency to internal lacerations. Their endemic diseases are as follow. Pleurisies are common, likewise those diseases which are accounted acute. It must be so, since their digestive organs are hard, and the slightest cause inevitably produces in many patients abscesses, the result of a stiff body and hard digestive organs. For their dryness, combined with the coldness of the water, makes them liable to internal lacerations. Such

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<sup>2</sup> ὑπερβάλλωσι Coray: ὑπερβάλλωσι MSS.

<sup>3</sup> ἐγγίγνεται Littré: γλυκαίνεται most MSS.: οὐ γλυκαίνεται Coray: καὶ ἀλυκὰ γίνεται Kühlewein.

## ΠΕΡΙ ΑΕΡΩΝ ΥΔΑΤΩΝ ΤΟΠΩΝ

- τὰς τοιαύτας φύσις εἶναι καὶ οὐ πολυπότας· οὐ γὰρ οἶόν τε ἅμα πολυβόρους τε εἶναι καὶ πολυπότας.<sup>1</sup> ὀφθαλμίας τε γίνεσθαι μὲν διὰ χρόνου, γίνεσθαι δὲ σκληρὰς καὶ ἰσχυράς, καὶ εὐθέως ῥήγνυσθαι τὰ ὄμματα· αἰμορροίας δὲ ἐκ τῶν ῥινῶν τοῖσι νεωτέροισι τριήκοντα ἐτέων γίνεσθαι ἰσχυρὰς τοῦ θέρεος· τὰ τε ἱερὰ νοσεύματα καλεούμενα, ὀλίγα μὲν ταῦτα, ἰσχυρὰ δέ. μακροβίους δὲ τοὺς
- 30 ἀνθρώπους τούτους μᾶλλον εἰκὸς εἶναι τῶν ἐτέρων· τὰ τε ἔλκεα οὐ φλεγματώδεα ἐγγίνεσθαι οὐδὲ ἀγριοῦσθαι· τὰ τε ἤθεα ἀγριώτερα ἢ ἡμερώτερα. τοῖσι μὲν ἀνδράσι ταῦτα τὰ νοσήματα ἐπιχώριά ἐστι· καὶ χωρίς, ἣν τι πάγκοινον κατάσχη ἐκ μεταβολῆς τῶν ὥρέων· τῇσι δὲ γυναιξί· πρῶτον μὲν στερίφαι<sup>2</sup> πολλαὶ γίνονται διὰ τὰ ὕδατα ἔοντα σκληρὰ τε καὶ ἀτέραμνα καὶ ψυχρά. αἱ γὰρ καθάρσιες οὐκ ἐπιγίνονται τῶν ἐπιμηνίων ἐπιτήδειαι, ἀλλὰ ὀλίγαι καὶ πονηραί. ἔπειτα
- 40 τίκτουσι χαλεπῶς· ἐκτιτρώσκουσι δὲ οὐ σφόδρα. ὁκόταν δὲ τέκωσι, τὰ παιδία ἀδύνατοι τρέφειν εἰσὶ· τὸ γὰρ γάλα ἀποσβέννυται ἀπὸ τῶν ὑδάτων τῆς σκληρότητος καὶ ἀτεραμνίας· φθίσιές τε γίνονται συχναὶ ἀπὸ τῶν τοκετῶν. ὑπὸ γὰρ βίης ῥήγματα ἰσχουσι καὶ σπάσματα. τοῖς δὲ παιδίοισιν ὕδρωπες ἐγγίνονται ἐν τοῖσιν ὄρχεσιν, ἕως μικρὰ ἢ· ἔπειτα προϊούσης τῆς ἡλικίης ἀφανίζονται· ἢ βῶσί τε ὀψὲ ἐν ταύτῃ τῇ πόλει.
- 48

V. Περὶ μὲν οὖν τῶν θερμῶν πνευμάτων καὶ τῶν ψυχρῶν καὶ τῶν πολίων τούτων ὧδε ἔχει ὡς προείρηται. ὁκόσαι δὲ κέονται πρὸς τὰ πνεύματα

<sup>1</sup> So most MSS.: omitted by B b and Kühlewein. It contradicts Chapter VII, ll. 20, 21.

## AIRS WATERS PLACES, IV.-V.

constitutions necessarily make men eat much and drink little; for one cannot be both a great eater and a great drinker. Inflammations of the eyes occur at last; they are hard and violent, and rapidly cause rupture of the eyes. Men under thirty suffer from violent bleedings at the nose in summer. Instances of the disease called "sacred" are rare but violent. These men are more likely to be long-lived than are others. Their sores become neither phlegmatic<sup>1</sup> nor malignant, but their characters incline to fierceness, not to mildness. For men these diseases are endemic, besides there are epidemic diseases which may prevail through the change of the seasons. As to the women, firstly many become barren through the waters being hard, indigestible and cold. Their menstrual discharges are not healthy, but are scanty and bad. Then childbirth is difficult, although abortion is rare. After bearing children they cannot rear them, for their milk is dried up through the hardness and indigestibility of the waters, while cases of phthisis are frequent after parturition, for the violence of it causes ruptures and strains. Children suffer from dropsies in the testicles while they are little, which disappear as they grow older. In such a city puberty is late.

V. The effects of hot winds and of cold winds on these cities are such as I have described; the following are the effects of winds on cities lying

<sup>1</sup> "Suppurating."

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<sup>2</sup> στερίλαι Coray: στεριφναι or στριφναι MSS.: στιφραι Ermerins and Reinhold.

- τὰ μεταξὺ τῶν θερινῶν ἀνατολέων τοῦ ἡλίου καὶ τῶν χειμερινῶν καὶ ὁκόσαι τὸ ἐναντίον τούτων, ὧδε ἔχει περὶ αὐτέων· ὁκόσαι μὲν πρὸς τὰς ἀνατολάς τοῦ ἡλίου κέονται, ταύτας εἰκὸς εἶναι ὑγιεινοτέρας τῶν πρὸς τὰς ἄρκτους ἐστραμμένων καὶ τῶν πρὸς τὰ θερμά, ἣν καὶ στάδιον<sup>1</sup> τὸ
- 10 μεταξὺ ἧ. πρῶτον<sup>2</sup> μὲν γὰρ μετριώτερον ἔχει τὸ θερμὸν καὶ τὸ ψυχρόν· ἔπειτα τὰ ὕδατα, ὁκόσα πρὸς τὰς τοῦ ἡλίου ἀνατολάς ἐστι, ταῦτα λαμπρά τε εἶναι ἀνάγκη καὶ εὐώδεα καὶ μαλθακὰ καὶ ἐρατεινὰ ἐγγίνεσθαι ἐν ταύτῃ τῇ πόλει· ὁ γὰρ ἥλιος †κωλύει ἀνίσχων καὶ καταλάμπων. τὸ γὰρ ἐωθινὸν ἐκάστοτε αὐτὸς ὁ ἡὴρ ἐπέχει ὥς ἐπὶ τὸ πολὺ.†<sup>3</sup> τά τε εἶδεα τῶν ἀνθρώπων εὐχροά τε καὶ ἀνθηρά ἐστι μᾶλλον ἢ ἄλλη ἣν μή τις νοῦσος κωλύῃ. λαμπρόφωνοί τε οἱ ἄνθρωποι<sup>4</sup> ὀργήν
- 20 τε καὶ σύνεσιν βελτίους εἰσὶ τῶν προσβορείων,<sup>5</sup> ἥπερ καὶ τὰ ἄλλα τὰ ἐμφυόμενα ἀμείνω ἐστίν. ἔοικέ τε μάλιστα ἢ οὕτω κειμένη πόλις ἥρι κατὰ τὴν μετριότητα τοῦ θερμοῦ καὶ τοῦ ψυχροῦ· τά τε νοσεύματα ἐλάσσω μὲν γίνεται καὶ ἀσθενέστερα, ἔοικε δὲ τοῖς ἐν τῇσι πόλεσι γενομένοις νοσεύμασι τῇσι πρὸς τὰ θερμὰ πνεύματα ἐστραμμένῃσιν. αἱ τε γυναῖκες αὐτόθι ἀρικύμονές<sup>6</sup> εἰσι
- 28 σφόδρα καὶ τίκτουσι ῥηιδίως.

VI. Περὶ μὲν τούτων ὧδε ἔχει. ὁκόσαι δὲ πρὸς τὰς δύσιας κεῖνται καὶ αὐτῇσιν ἐστι σκέπη

<sup>1</sup> So all MSS. and editors. I would insert *μόνον*.

<sup>2</sup> *πρῶτον* Coray: *πρότερον* MSS.

<sup>3</sup> The part within daggers is as given in most MSS. For *κωλύει* (which cannot govern *ὑδατα* as an object) Coray would read *καλλύνει*, and Ermerins and Reinhold bracket

exposed to those between the summer and winter risings of the sun, and to those opposite to these. Those that lie towards the risings of the sun are likely to be healthier than those facing the north and those exposed to the hot winds, even though they be but a furlong apart. In the first place, the heat and the cold are more moderate. Then the waters that face the risings of the sun must be clear, sweet-smelling, soft and delightful, in such a city. For the sun, shining down upon them when it rises, purifies them. The persons of the inhabitants are of better complexion and more blooming than elsewhere, unless some disease prevents this. They are clear-voiced, and with better temper and intelligence than those who are exposed to the north, just as all things growing there are better. A city so situated is just like spring, because the heat and the cold are tempered; the diseases, while resembling those which we said occur in cities facing the hot winds, are both fewer and less severe. The women there very readily conceive and have easy deliveries.

VI. Such are the conditions in these cities. Those that lie towards the settings of the sun, and are

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τὸ γὰρ ἑωθινὸν . . . . . πολὺ. Perhaps καθαίρει (not unlike κωλύει in uncials) should be read for κωλύει, and the gloss read τὸ γὰρ ἑωθινὸν ἐκάστοτε αὐτὰ (αὐτὸς is meaningless) ὁ ἥλιος ἐπέχει ὡς ἐπὶ τὸ πολὺ. Has κωλύει arisen from κωλύη in the next sentence? In his notes Coray suggests ὁ γὰρ ἥλιος κωλύει (or κολούει) τὸν ἥερα ἀνίσχων καὶ καταλάμπων· τὸ γὰρ ἑωθινὸν αὐτόσε ἥλιος κ.τ.λ. But can αὐτόσε = αὐτόθι?

<sup>4</sup> καὶ should perhaps be added after ἑνθρωποι.

<sup>5</sup> προσβορέων Kühlewein: προσβορέων V 13: πρὸς βορέην most MSS.

<sup>6</sup> ἀρικύμονες Coray: ἐναρικύμονες V 13.

## ΠΕΡΙ ΑΕΡΩΝ ΥΔΑΤΩΝ ΤΟΠΩΝ

- τῶν πνευμάτων τῶν ἀπὸ τῆς ἡοῦς πνεόντων τὰ τε θερμὰ πνεύματα παραρρεῖ καὶ τὰ ψυχρὰ ἀπὸ τῶν ἄρκτων, ἀνάγκη ταύτας τὰς πόλεις θέσιν κεῖσθαι νοσερωτάτην. πρῶτον μὲν γὰρ τὰ ὕδατα οὐ λαμπρά· αἴτιον δέ, ὅτι ὁ ἡὴρ τὸ ἐωθινὸν κατέχει ὥς ἐπὶ τὸ πολὺ, ὅστις τῷ ὕδατι ἐγκαταμιγνύμενος τὸ λαμπρὸν ἀφανίζει· ὁ γὰρ ἥλιος πρὶν ἄνω  
 10 ἀρθῆναι οὐκ ἐπιλάμπει. τοῦ δὲ θέρεος ἔωθεν μὲν αὖραι ψυχραὶ πνέουσι καὶ δρόσοι πίπτουσι· τὸ δὲ λοιπὸν ἥλιος ἐγκαταδύνων ὥστε μάλιστα διέψει τοὺς ἀνθρώπους, διὸ καὶ ἀχρόους τε εἰκὸς εἶναι καὶ ἄρρώστους, τῶν τε νοσευμάτων πάντων μετέχειν μέρος τῶν προειρημένων· οὐδὲν γὰρ αὐτοῖς ἀποκέκριται. βαρυφώνους τε εἰκὸς εἶναι καὶ βραγχώδεις διὰ τὸν ἡέρα, ὅτι ἀκάθαρτος ὥς ἐπὶ τὸ πολὺ αὐτόθι γίνεται καὶ νοσώδης· οὔτε γὰρ ὑπὸ τῶν βορείων ἐκκρίνεται σφόδρα· οὐ γὰρ προσ-  
 20 ἔχουσι τὰ πνεύματα· ἃ τε προσέχουσιν αὐτοῖσι καὶ πρόσκεινται ὑδατεινότητά ἐστιν· ἐπεὶ τοιαῦτα τὰ ἀπὸ <sup>1</sup> τῆς ἐσπέρης πνεύματα· ἔοικέν τε μετοπώρῃ μάλιστα ἢ θέσις ἢ τοιαύτη τῆς πόλιος κατὰ τὰς τῆς ἡμέρης μεταβολάς, ὅτι πολὺ τὸ μέσον  
 25 γίνεται τοῦ τε ἐωθινοῦ καὶ τοῦ πρὸς τὴν δειλὴν.

VII. Περὶ μὲν πνευμάτων, ἃ τέ ἐστιν ἐπιτήδεια καὶ ἀνεπιτήδεια, ὧδε ἔχει. περὶ δὲ τῶν λοιπῶν <sup>2</sup> ὑδάτων βούλομαι διηγήσασθαι, ἃ τέ ἐστι νοσώδεα καὶ ἃ ὑγιεινότεα καὶ ὁκόσα ἀφ' ὕδατος κακὰ εἰκὸς γίνεσθαι καὶ ὅσα ἀγαθὰ. πλεῖστον γὰρ

<sup>1</sup> ἐπεὶ τοιαῦτα τὰ ἀπὸ Coray: ἐπεὶ τὰ ἐπὶ most MSS.

<sup>2</sup> λοιπῶν omitted by 7027 and Wilamowitz.

## AIRS WATERS PLACES, VI.—VII.

sheltered from the east winds, while the hot winds and the cold north winds blow past them—these cities must have a most unhealthy situation. In the first place, the waters are not clear, the reason being that in the morning mist is generally prevalent, which dissolves in the water and destroys its clearness, as the sun does not shine upon it before it is high on the horizon. In the summer cold breezes blow in the morning and there are heavy dews; for the rest of the day the sun as it advances towards the west thoroughly scorches the inhabitants, so that they are likely to be pale and sickly, subject to all the diseases aforesaid, for none are peculiar to them.<sup>1</sup> They are likely to have deep, hoarse voices, because of the atmosphere, since it is usually impure and unhealthy in such places. For while it is not clarified much by the north winds, which are not prevalent there, the winds that do prevail insistently are very rainy, such being the nature of westerly winds. Such a situation for a city is precisely like autumn in respect of the changes of the day, seeing that the difference between sunrise and afternoon is great.

VII. So much for winds, healthy and unhealthy. I wish now to treat of waters, those that bring disease or very good health, and of the ill or good that is likely to arise from water. For the influence

<sup>1</sup> αὐτοῖς may be either a dative of advantage or one of disadvantage. There can thus be two meanings:—

- (1) “for none are isolated to their advantage,” *i. e.* they are exempt from none;
- (2) “for none are isolated to their disadvantage,” *i. e.* they have no disease peculiar to themselves. I have taken the latter meaning, with Littré, but a good case could be made out for the former.



## ΠΕΡΙ ΑΕΡΩΝ ΥΔΑΤΩΝ ΤΟΠΩΝ

- μέρος συμβάλλεται ἐς τὴν ὑγιείην. ὁκόσα μὲν οὖν ἐστὶν ἐλώδεα καὶ στάσιμα καὶ λιμναῖα, ταῦτα ἀνάγκη τοῦ μὲν θέρεος εἶναι θερμὰ καὶ παχέα καὶ ὀδμὴν ἔχοντα, ἅτε οὐκ ἀπόρρυτα ἔοντα· ἀλλὰ
- 10 τοῦ τε ὀμβρίου ὕδατος ἐπιφερομένου<sup>1</sup> αἰεὶ νέου τοῦ τε ἡλίου καίοντος ἀνάγκη ἄχροά τε εἶναι καὶ πονηρὰ καὶ χολώδεα, τοῦ δὲ χειμῶνος παγετώδεά τε καὶ ψυχρὰ καὶ τεθολωμένα ὑπὸ τε χιόνος καὶ παγετῶν, ὥστε φλεγματωδέστατα εἶναι καὶ βραγ-  
χωδέστατα. τοῖσι δὲ πίνουσι σπλῆνας μὲν αἰεὶ μεγάλους εἶναι καὶ μεμνωμένους καὶ τὰς γαστέρας σκληράς τε καὶ λεπτάς καὶ θερμὰς, τοὺς δὲ ὦμους καὶ τὰς κληῖδας καὶ τὸ πρόσωπον καταλελε-  
πτύσθαι· ἐς γὰρ τὸν σπλῆνα αἱ σάρκες συντήκον-  
20 ται, διότι ἰσχυροὶ εἰσιν· ἐδωδούς τε εἶναι τοὺς τοιούτους καὶ διψηρούς· τὰς τε κοιλίας ξηροτάτας τε καὶ θερμοτάτας καὶ τὰς ἄνω καὶ τὰς κάτω ἔχειν, ὥστε τῶν φαρμάκων ἰσχυροτέρων δεῖσθαι. τοῦτο μὲν τὸ νόσημα αὐτοῖσι σύντροφόν ἐστι καὶ θέρεος καὶ χειμῶνος. πρὸς δὲ τούτοισιν οἱ ὕδρωπες πλείστοί τε γίνονται καὶ θανατωδέστατοι. τοῦ γὰρ θέρεος δυσεντερίαι τε πολλαὶ ἐμπίπτουσι καὶ διάρροiai καὶ πυρετοὶ τεταρταῖοι πολυχρό-  
νιοι. ταῦτα δὲ τὰ νοσεύματα μηκυνθέντα τὰς  
30 τοιαύτας φύσεως ἐς ὕδρωπας καθίστησι καὶ ὑπο-  
κτείνει. ταῦτα μὲν αὐτοῖσι τοῦ θέρεος γίνεται. τοῦ δὲ χειμῶνος τοῖσι νεωτέροισι μὲν περιπνευ-  
μονίαι τε καὶ μανιώδεα νοσεύματα, τοῖσι δὲ πρεσβυτέροισι καῦσοι διὰ τὴν τῆς κοιλίης σκλη-  
ρότητα. τῇσι δὲ γυναῖξιν οἰδήματα ἐγγίνεται καὶ φλέγμα λευκόν, καὶ ἐν γαστρὶ ἰσχοῦσι μόλις καὶ τίκτουσι χαλεπῶς· μέγала τε τὰ ἔμβρυα καὶ

of water upon health is very great. Such as are marshy, standing and stagnant must in summer be hot, thick and stinking, because there is no outflow; and as fresh rain-water is always flowing in and the sun heats them, they must be of bad colour, unhealthy and bilious. In winter they must be frosty, cold and turbid through the snow and frosts, so as to be very conducive to phlegm and sore throats. Those who drink it have always large, stiff spleens, and hard, thin, hot stomachs, while their shoulders, collar-bones and faces are emaciated; the fact is that their flesh dissolves to feed the spleen, so that they are lean. With such a constitution they eat and drink heavily. Their digestive organs, upper and lower, are very dry and very hot, so that they need more powerful drugs. This malady is endemic both in summer and in winter. In addition the dropsies that occur are very numerous and very fatal. For in the summer there are epidemics of dysentery, diarrhoea and long quartan fever, which diseases when prolonged cause constitutions such as I have described to develop dropsies that result in death. These are their maladies in summer. In winter young people suffer from pneumonia and illnesses attended by delirium, the older, through the hardness of their digestive organs, from ardent fever. Among the women occur swellings and leucophlegmasia; they conceive hardly and are delivered with difficulty. The babies are big and swollen, and

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<sup>1</sup> ἐπιφερομένου b: ἐπιτρεφόμενου most MSS.

οιδέοντα. ἔπειτα ἐν τῇσι τροφῇσι φθινώδεά τε  
καὶ πονηρὰ γίνεται· ἢ τε κάθαρσις τῇσι γυναιξίν  
40 οὐκ ἐπιγίνεται χρηστὴ μετὰ τὸν τόκον. τοῖσι δὲ  
παιδίοισι κῆλαι ἐπιγίνονται μάλιστα καὶ τοῖσιν  
ἀνδράσι κίρσοι καὶ ἔλκεα ἐν τῇσι κνήμησιν, ὥστε  
τὰς τοιαύτας φύσεως οὐχ οἶόν τε μακροβίους εἶναι,  
ἀλλὰ προγηράσκειν τοῦ χρόνου τοῦ ἰκνευμένου.  
ἔτι δὲ αἱ γυναῖκες δοκέουσιν ἔχειν ἐν γαστρί, καὶ  
ὀκόταν ὁ τόκος ἦ, ἀφανίζεται τὸ πλήρωμα τῆς  
γαστροῦ. τοῦτο δὲ γίνεται, ὀκόταν ὑδρωπιήσωσιν  
αἱ ὑστέραι. τὰ μὲν τοιαῦτα ὕδατα νομίζω μοχ-  
θηρὰ εἶναι πρὸς ἅπαν χρῆμα· δεύτερα δὲ ὅσων  
50 εἶεν<sup>1</sup> αἱ πηγαὶ ἐκ πετρέων—σκληρὰ γὰρ ἀνάγκη  
εἶναι—ἢ ἐκ γῆς, ὅκου θερμὰ ὕδατὰ ἐστίν, ἢ σίδηρος  
γίνεται ἢ χαλκὸς ἢ ἄργυρος ἢ χρυσὸς ἢ θεῖον ἢ  
στυπτηρίῃ ἢ ἄσφαλτον ἢ νίτρον. ταῦτα γὰρ  
πάντα ὑπὸ βίης γίνονται τοῦ θερμοῦ. οὐ τοίνυν  
οἶόν τε ἐκ τοιαύτης γῆς ὕδατα ἀγαθὰ γίνεσθαι,  
ἀλλὰ σκληρὰ καὶ καυσώδεα διουρεῖσθαι τε χα-  
λεπὰ καὶ πρὸς τὴν διαχώρησιν ἐναντία εἶναι.  
ἄριστα δὲ ὀκόσα ἐκ μετεώρων χωρίων ῥεῖ καὶ  
λόφων γεηρῶν. αὐτὰ τε γάρ ἐστι γλυκέα καὶ  
60 λευκὰ καὶ τὸν οἶνον φέρειν ὀλίγον οἶά τέ ἐστιν.  
τοῦ δὲ χειμῶνος θερμὰ γίνεται, τοῦ δὲ θέρεος  
ψυχρά. οὕτω γὰρ ἂν εἴη ἐκ βαθυτάτων πηγέων.  
μάλιστα δὲ ἐπαινέω ὧν τὰ ρεύματα πρὸς τὰς  
ἀνατολάς τοῦ ἡλίου ἐρρώγασι καὶ μᾶλλον πρὸς  
τὰς θερινάς. ἀνάγκη γὰρ λαμπρότερα εἶναι καὶ  
εὐώδεα καὶ κοῦφα. ὀκόσα δὲ ἐστίν ἀλυκὰ καὶ  
ἀτέραμνα καὶ σκληρά, ταῦτα μὲν πάντα πίνειν  
οὐκ ἀγαθὰ· εἰσὶ δ' ἔνιαι φύσιες καὶ νοσεύματα,  
ἐς ἃ ἐπιτήδειά ἐστι τὰ τοιαῦτα ὕδατα πινόμενα,

## AIRS WATERS PLACES, VII.

then, as they are nursed, they become emaciated<sup>1</sup> and miserable. The discharge after childbirth is bad. Children are very subject to hernia and men to enlarged veins and to ulcers on the legs, so that such constitutions cannot be long-lived but must grow prematurely old. Moreover, the women appear to be with child, yet, when the time of delivery comes, the fullness of the womb disappears, this being caused by dropsy in that organ. Such waters I hold to be absolutely bad. The next worst will be those whose springs are from rocks—for they must be hard—or from earth where there are hot waters, or iron is to be found, or copper, or silver, or gold, or sulphur, or alum, or bitumen, or soda. For all these result from the violence of the heat. So from such earth good waters cannot come, but hard, heating waters, difficult to pass and causing constipation. The best are those that flow from high places and earthy hills. By themselves they are sweet and clear, and the wine they can stand is but little. In winter they are warm, in summer cold. They would naturally be so, coming from very deep springs. I commend especially those whose flow breaks forth towards the rising—by preference the summer rising—of the sun. For they must be brighter, sweet-smelling and light; while all that are salt, harsh and hard are not good to drink, though there are some constitutions and some diseases which are benefited by drinking such waters, concerning which I will speak

<sup>1</sup> Or “consumptive.”

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<sup>1</sup> *ειεν* so most MSS.; *ειην* V: *ειολν* Reinhold (unnecessarily, for the “vague” opt. without *αν* is not rare in the Hippocratic writings). However, 7027 reads *sunt*.

- 70 *περὶ ὧν φράσω αὐτίκα. ἔχει δὲ περὶ τούτων ὧδε·  
 ὁκόσων μὲν αἱ πηγαὶ πρὸς τὰς ἀνατολὰς ἔχουσι,  
 ταῦτα μὲν ἄριστα αὐτὰ ἐωυτῶν ἐστὶ· δεύτερα δὲ  
 τὰ μεταξὺ τῶν θερινῶν ἀνατολέων ἐστὶ τοῦ ἡλίου  
 καὶ δυσίων, καὶ μᾶλλον τὰ πρὸς τὰς ἀνατολάς·  
 τρίτα δὲ τὰ μεταξὺ τῶν δυσμέων τῶν θερινῶν  
 καὶ τῶν χειμερινῶν· φαυλότατα δὲ τὰ πρὸς τὸν  
 νότον καὶ τὰ μεταξὺ τῆς χειμερινῆς ἀνατολῆς  
 καὶ δύσιος. καὶ ταῦτα τοῖσι μὲν νοτίοισι πάνυ  
 πονηρά, τοῖσι δὲ βορείοιςιν ἀμείνω. τούτοιςιν δὲ*
- 80 *πρέπει ὧδε χρῆσθαι· ὅστις μὲν ὑγιαίνει τε καὶ  
 ἔρρωται, μηδὲν διακρίνειν, ἀλλὰ πίνειν αἰεὶ τὸ  
 παρὲν. ὅστις δὲ νούσου εἵνεκα βούλεται τὸ  
 ἐπιτηδειότατον πίνειν, ὧδε ἂν ποιέων μάλιστα  
 τυγχάνοι τῆς ὑγιείης· ὁκόσων μὲν αἱ κοιλίαι  
 σκληραὶ εἰσι καὶ συγκαίειν ἀγαθαί, τούτοιςιν  
 μὲν τὰ γλυκύτατα συμφέρει καὶ κουφότατα καὶ  
 λαμπρότατα· ὁκόσων δὲ μαλθακαὶ αἱ νηδύες καὶ  
 ὑγραὶ εἰσι καὶ φλεγματώδεις, τούτοιςιν δὲ τὰ  
 σκληρότατα καὶ ἀτεραμνότατα καὶ τὰ ὑφαλυκί·*
- 90 *οὕτω γὰρ ἂν ξηραίνονται μάλιστα. ὁκόσα γὰρ  
 ὕδατά ἐστιν ἔψειν ἄριστα καὶ τακερώτατα, ταῦτα  
 καὶ τὴν κοιλίην διαλύειν εἰκὸς μάλιστα καὶ δια-  
 τήκειν· ὁκόσα δὲ ἐστὶν ἀτέραμνα καὶ σκληρὰ καὶ  
 ἥκιστα ἐφανά, ταῦτα δὲ συνίστησι μάλιστα τὰς  
 κοιλίας καὶ ξηραίνει. ἀλλὰ γὰρ ψευδάμενοι<sup>1</sup>  
 εἰσὶν οἱ ἄνθρωποι τῶν ἀλμυρῶν ὑδάτων πέρι δι'  
 ἀπειρίην, καὶ ὅτι<sup>2</sup> νομίζεται διαχωρητικά· τὰ δὲ  
 ἐναντιώτατά ἐστι πρὸς τὴν διαχώρησιν· ἀτέραμνα  
 γὰρ καὶ ἀνέψανα, ὥστε καὶ τὴν κοιλίην ὑπ' αὐτῶν*
- 100 *στύφεσθαι μᾶλλον ἢ τήκεσθαι.*

## AIRS WATERS PLACES, VII.

presently. Aspect affects spring waters thus. Those whose sources face the risings of the sun are the very best. Second in excellence come those between the summer risings and the summer settings, by preference in the direction of the risings. Third best are those between the summer and winter settings. The worst are those that face the south, and those between the winter rising and setting. These are very bad indeed when the winds are in the south, less bad when they are in the north. Spring waters should be used thus. A man in health and strength can drink any water that is at hand without distinction, but he who because of disease wishes to drink the most suitable can best attain health in the following way. Those whose digestive organs are hard and easily heated will gain benefit from the sweetest, lightest and most sparkling waters. But those whose bellies are soft, moist, and phlegmatic, benefit from the hardest, most harsh and saltish waters, for these are the best to dry them up. For waters that are best for cooking and most solvent naturally loosen the digestive organs the most and relax them; but harsh waters, hard and very bad for cooking, contract most these organs and dry them up. In fact the public are mistaken about saline waters through inexperience, in that they are generally considered to be laxative. The truth is that they are just the reverse; they are harsh and bad for cooking, so that the digestive organs too are stiffened by them rather than loosened.

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<sup>1</sup> ψευδάμενοι so V 13: ἐψευσμένοι Kühlewein.

<sup>2</sup> καὶ ὅτι MSS.: Wilamowitz would delete ὅτι; Coray would read κατότι for καὶ ὅτι. Perhaps καὶ should be deleted.

- VIII. Καὶ περὶ μὲν τῶν πηγαίων ὑδάτων ὧδε ἔχει. περὶ δὲ τῶν ὀμβρίων καὶ ὀκόσα ἀπὸ χιόνος φράσω ὁκως ἔχει. τὰ μὲν οὖν ὀμβρια κουφότατα καὶ γλυκύτατά ἐστι καὶ λεπτότατα καὶ λαμπρότατα. τὴν τε γὰρ ἀρχὴν ὁ ἥλιος ἀνάγει καὶ ἀναρπάζει τοῦ ὕδατος τό τε λεπτότατον καὶ κουφότατον. δῆλον δὲ οἱ ἅλεις ποιεῖουσιν. τὸ μὲν γὰρ ἀλμυρὸν λείπεται αὐτοῦ ὑπὸ πάχεος καὶ βάρους καὶ γίνεται ἅλεις, τὸ δὲ λεπτότατον ὁ ἥλιος
- 10 ἀναρπάζει ὑπὸ κουφότητος· ἀνάγει δὲ τὸ τοιοῦτο οὐκ ἀπὸ τῶν ὑδάτων μόνον τῶν λιμναίων, ἀλλὰ καὶ ἀπὸ τῆς θαλάσσης καὶ ἐξ ἀπάντων ἐν ὀκόσοισι ὑγρὸν τι ἔνεστιν. ἔνεστι δὲ ἐν παντὶ χρήματι. καὶ ἐξ αὐτῶν τῶν ἀνθρώπων ἄγει τὸ λεπτότατον τῆς ἱκμάδος καὶ κουφότατον. τεκμήριον δὲ μέγιστον· ὅταν<sup>1</sup> ἄνθρωπος ἐν ἡλίῳ βαδίζῃ ἢ καθίζῃ ἱμάτιον ἔχων, ὀκόσα μὲν τοῦ χρωτὸς ὁ ἥλιος ἐφορᾷ, οὐχ ἰδρῶν ἄν· ὁ γὰρ ἥλιος ἀναρπάζει τὸ προφαινόμενον τοῦ ἰδρῶτος· ὀκόσα δὲ ὑπὸ τοῦ ἱματίου
- 20 ἐσκέπασται ἢ ὑπ' ἄλλου του, ἰδροῖ. ἐξάγεται μὲν γὰρ ὑπὸ τοῦ ἡλίου καὶ βιάζεται, σῶζεται δὲ ὑπὸ τῆς σκέπης, ὥστε μὴ ἀφανίζεσθαι ὑπὸ τοῦ ἡλίου. ὀκόταν δὲ ἐς σκιὴν ἀφίκεται, ἅπαν τὸ σῶμα ὁμοίως ἰδίει.<sup>2</sup> οὐ γὰρ ἔτι ὁ ἥλιος ἐπιλάμπει. διὰ ταῦτα δὲ καὶ σήπεται τῶν ὑδάτων τάχιστα ταῦτα καὶ ὁδμὴν ἴσχει πονηρὴν τὸ ὀμβριον, ὅτι ἀπὸ πλείστων συνήκται καὶ συμμέμικται, ὥστε σήπεσθαι τάχιστα. ἔτι δὲ πρὸς τούτοις ἐπειδὴ ἀρπασθῇ καὶ μετεωρισθῇ περιφερόμενον καὶ
- 30 καταμεμιγμένον ἐς τὸν ἥερα, τὸ μὲν θολερὸν αὐτοῦ καὶ νυκτοειδὲς ἐκκρίνεται καὶ ἐξίσταται καὶ γίνεται ἡὴρ καὶ ὀμίχλη, τὸ δὲ λαμπρότατον<sup>3</sup>
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## AIRS WATERS PLACES, VIII.

VIII. Such are the facts about spring waters. I will now proceed to speak of rain water and snow water. Rain waters are the lightest, sweetest, finest and clearest. To begin with, the sun raises and draws up the finest and lightest part of water, as is proved by the formation of salt. The brine, owing to its coarseness and weight, is left behind and becomes salt; the finest part, owing to its lightness, is drawn up by the sun. Not only from pools does the sun raise this part, but also from the sea and from whatever has moisture in it—and there is moisture in everything. Even from men it raises the finest and lightest part of their juices. The plainest evidence thereof is that when a man walks or sits in the sun wearing a cloak, the parts of his skin reached by the sun will not sweat, for it draws up each layer of sweat as it appears. But those parts sweat which are covered by his cloak or by anything else. For the sweat drawn forcibly out by the sun is prevented by the covering from disappearing through the sun's power. But when the man has come into a shady place, his whole body sweats alike, as the sun no longer shines upon it. For this reason too rain-water grows foul quicker than any other, and has a bad smell; being a mixture gathered from very many sources it grows foul very quickly. Furthermore, when it has been carried away aloft, and has combined with the atmosphere as it circles round, the turbid, dark part of it separates out, changes and becomes mist and fog, while the clearest and

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<sup>1</sup> Cobet would insert γὰρ after δταν.

<sup>2</sup> ἰδίει Heringa, from Erotian, who gives ἰδίειν = ἰδροῦν : δίδει most MSS. : διει Coray and Littré.

<sup>3</sup> λαμπρότατον V B b: λεπτότατον many MSS.



καὶ κουφότατον αὐτοῦ λείπεται καὶ γλυκαίνεται  
 ὑπὸ τοῦ ἡλίου καιόμενόν τε καὶ ἐψόμενον. γίνεται  
 δὲ καὶ τὰλλα πάντα τὰ<sup>1</sup> ἐψόμενα αἰεὶ γλυκύτερα.  
 ἕως μὲν οὖν διεσκεδασμένον ἢ καὶ μήπω συνεστήκη,  
 φέρεται μετέωρον. ὁκόταν δέ κου ἀθροισθῇ καὶ  
 συστραφῇ ἐς τὸ αὐτὸ ὑπὸ ἀνέμων ἀλλήλοισιν  
 ἐναντιωθέντων ἐξαίφνης, τότε καταρρήγνυται, ἢ  
 40 ἂν τύχῃ πλείστον συστραφέν. τότε γὰρ εἰκόσ  
 τοῦτο μᾶλλον γίνεσθαι, ὁκόταν τὰ νέφεα ὑπὸ  
 ἀνέμου στάσιν μὴ ἔχοντος<sup>2</sup> ὠρμημένα ἑόντα<sup>3</sup> καὶ  
 χωρέοντα ἐξαίφνης ἀντικόψῃ πνεῦμα ἐναντίον  
 καὶ ἕτερα νέφεα· ἐνταῦθα τὸ μὲν πρῶτον αὐτοῦ  
 συστρέφεται, τὰ δὲ ὀπισθεν ἐπιφέρεται τε καὶ οὕτω  
 παχύνεται καὶ μελαίνεται καὶ συστρέφεται ἐς τὸ  
 αὐτὸ καὶ ὑπὸ βάρους καταρρήγνυται καὶ ὄμβροι  
 γίνονται. ταῦτα μὲν ἐστὶν ἄριστα κατὰ τὸ εἶκος.  
 δεῖται δὲ ἀφέψεσθαι καὶ ἀποσήπεσθαι.<sup>4</sup> εἰ δὲ  
 50 μὴ, ὁδμὴν ἴσχει πονηρὴν καὶ βράγχος καὶ βήχες  
 καὶ βαρυφωνίη τοῖς πίνουσι προσίσταται.

Τὰ δὲ ἀπὸ χιόνος καὶ κρυστάλλων πονηρὰ  
 πάντα. ὁκόταν γὰρ ἅπαξ παγῇ, οὐκ ἔτι ἐς τὴν  
 ἀρχαίην φύσιν καθίσταται, ἀλλὰ τὸ μὲν αὐτοῦ  
 λαμπρὸν καὶ κοῦφον καὶ γλυκὺ ἐκκρίνεται καὶ  
 ἀφανίζεται, τὸ δὲ θολωδέστατον καὶ σταθμωδέ-  
 στατον λείπεται. γνοίης δ' ἂν ὧδε· εἰ γὰρ βούλει,  
 ὅταν ἢ χειμῶν,<sup>5</sup> ἐς ἀγγεῖον μέτρῳ ἐγχείας ὕδωρ  
 θεῖναι ἐς τὴν αἰθρίην, ἵνα πήξεται μάλιστα, ἔπειτα  
 60 τῇ ὑστεραίῃ ἐσενεγκὼν ἐς ἀλήν, ὅκου χαλάσει

<sup>1</sup> τὰ, Wilamowitz would delete this.

<sup>2</sup> ὑπὸ ἀνέμου στάσιν μὴ ἔχοντος van der Linden and Coray :  
 μὴ ὑπὸ ἀνέμου στάσιν ἔχοντος MSS. and Littré: νέφεα ὑπὸ  
 ἀνέμου σύστασιν ἔχοντα Kühlewein.

## AIRS WATERS PLACES, VIII.

lightest part of it remains, and is sweetened as the heat of the sun produces coction, just as all other things always become sweeter through coction. Now as long as it is scattered and uncondensed, it travels about aloft, but as soon as it collects anywhere and is compressed into one place owing to sudden, contrary winds, then it bursts wherever the most compression happens to take place. For this is more likely to occur when the clouds, set in motion and carried along by a wind that allows them no rest, are suddenly encountered by a contrary blast and by other clouds.<sup>1</sup> In such cases the front is compressed, the rear comes on and is thus thickened, darkened and compressed into one place, so that the weight bursts it and causes rain. Such waters are naturally the best. But they need to be boiled and purified<sup>2</sup> from foulness if they are not to have a bad smell, and give sore throat, coughs and hoarseness to those who drink them.

Waters from snow and ice are all bad. For, once frozen, water never recovers its original nature, but the clear, light, sweet part is separated out and disappears, while the muddiest and heaviest part remains. The following experiment will prove it. Pour by measure, in winter, water into a vessel and set it in the open, where it will freeze best; then on the next day bring it under cover, where the ice will

<sup>1</sup> The reading of Kühlewein means, "condensed, set in motion and carried along by a wind, are suddenly," etc.

<sup>2</sup> Or, with the reading of Coray, "filtered."

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<sup>3</sup> *έόντα* of the MSS. should probably be deleted as an anticipation of the end of *χωρέοντα*.

<sup>4</sup> *ἀποσήπασθαι* MSS. : *ἀποσήθεσθαι* Coray after Foes.

<sup>5</sup> *δταν ἢ χειμῶν ές* Coray : *δταν οί χειμῶνες* V B : *δταν χειμῶν εἰς* b.

## ΠΕΡΙ ΑΕΡΩΝ ΥΔΑΤΩΝ ΤΟΠΩΝ

μάλιστα ὁ παγετός, ὁκόταν δὲ λυθῇ, ἀναμετρεῖν τὸ ὕδωρ, εὐρήσεις ἔλασσον συχνῶ. τοῦτο τεκμήριον, ὅτι ὑπὸ τῆς πῆξις ἀφανίζεται καὶ ἀναξηραίνεται τὸ κουφότατον καὶ λεπτότατον, οὐ τὸ βαρύτατον καὶ παχύτατον· οὐ γὰρ ἂν δύναιτο. ταύτῃ οὖν νομίζω πονηρότατα ταῦτα τὰ ὕδατα εἶναι τὰ ἀπὸ χιόνος καὶ κρυστάλλου καὶ τὰ τούτοις ἐπόμενα πρὸς ἅπαντα χρήματα.

68 IX. Περὶ μὲν οὖν ὀμβρίων ὑδάτων καὶ τῶν ἀπὸ χιόνος καὶ κρυστάλλων οὕτως ἔχει. λιθιώσι δὲ μάλιστα ἄνθρωποι<sup>1</sup> καὶ ὑπὸ νεφριτίδων καὶ στραγγουρίης ἀλίσκονται καὶ ἰσχυιάδων, καὶ κῆλαι γίνονται, ὅκου ὕδατα πίνουσι παντοδαπώτατα καὶ ἀπὸ ποταμῶν μεγάλων, ἐς οὓς ποταμοὶ ἕτεροι ἐμβάλλουσι, καὶ ἀπὸ λίμνης, ἐς ἣν ρεύματα πολλὰ καὶ παντοδαπὰ ἀφικνεῦνται, καὶ ὁκόσοι ὕδασιν ἐπακτοῖσι χρέονται διὰ μακροῦ ἀγομένοισι καὶ  
10 μὴ ἐκ βραχέος. οὐ γὰρ οἷόν τε ἕτερον ἐτέρῳ εἰκέναι ὕδωρ, ἀλλὰ τὰ μὲν γλυκέα εἶναι, τὰ δὲ ἀλυκά τε καὶ στυπτηριώδεα, τὰ δὲ ἀπὸ θερμῶν ρεῖν. συμμिशγόμενα δὲ ταῦτα ἐς τὸ αὐτὸ ἀλλήλοισι στασιάζει καὶ κρατεῖ αἰεὶ τὸ ἰσχυρότατον. ἰσχύει δὲ οὐκ αἰεὶ τούτῳ, ἀλλὰ ἄλλοτε ἄλλο κατὰ τὰ πνεύματα· τῷ μὲν γὰρ βορέης τὴν ἰσχὺν παρέχεται, τῷ δὲ ὁ νότος, καὶ τῶν λοιπῶν περὶ αὐτὸς λόγος. ὑφίστασθαι οὖν τοῖσι τοιούτοις ἀνάγκη ἐν τοῖς ἀγγείοις ἵλυν καὶ ψάμμον· καὶ ἀπὸ τούτων  
20 πινομένων τὰ νοσήματα γίνεται τὰ προειρημένα· ὅτι δὲ οὐχ ἅπασιν, ἐξῆς φράσω.

Ὅκόσων μὲν ἢ τε κοιλίῃ εὐροός τε καὶ ὑγιανή ἐστι καὶ ἡ κύστις μὴ πυρετώδης μηδὲ ὁ στόμαχος τῆς κύστιος συμπέφρακται λίην, οὗτοι μὲν διου-

melt best ; if, when it is dissolved, you measure it again you will find it much diminished. This shows that freezing dries up and causes to disappear the lightest and finest part, not the heaviest and coarsest, to do which it has no power. In this way, therefore, I am of opinion that such waters, derived from snow or ice, and waters similar to these, are the worst for all purposes.

IX. Such are the properties of rain waters, and of those from snow and ice. Stone, kidney disease, strangury and sciatica are very apt to attack people, and ruptures occur, when they drink water of very many different kinds, or from large rivers, into which other rivers flow, or from a lake fed by many streams of various sorts, and whenever they use foreign waters coming from a great, not a short, distance. For one water cannot be like another ; some are sweet, others are impregnated with salt and alum, others flow from hot springs. These when mixed up together disagree, and the strongest always prevails. But the strongest is not always the same ; sometimes it is one, sometimes another, according to the winds. One has its strength from a north wind, another from the south wind, and similarly with the others. Such waters then must leave a sediment of mud and sand in the vessels, and drinking them causes the diseases mentioned before. That there are exceptions I will proceed to set forth.

Those whose bowels are loose and healthy, whose bladder is not feverish, and the mouth of whose bladder is not over narrow, pass water easily, and no

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<sup>1</sup> ἄνθρωποι MSS. : ὠνθρωποι Kühlewein.

## ΠΕΡΙ ΑΕΡΩΝ ΥΔΑΤΩΝ ΤΟΠΩΝ

- ρεῦσι ῥηϊδίως, καὶ ἐν τῇ κύστει οὐδὲν συστρέφεται.  
 ὁκόσων δὲ ἂν ἡ κοιλίη πυρετώδης ᾖ, ἀνάγκη καὶ  
 τὴν κύστιν τωὐτὸ πάσχειν. ὁκόταν γὰρ θερμανθῇ  
 μᾶλλον τῆς φύσιος, ἐφλέγμηνεν αὐτῆς ὁ στό-  
 μαχος. ὁκόταν δὲ ταῦτα πάθῃ, τὸ οὖρον οὐκ  
 30 ἀφίησιν, ἀλλ' ἐν ἐσωτῇ συνέψει καὶ συγκαίει.  
 καὶ τὸ μὲν λεπτότατον αὐτοῦ ἀποκρίνεται καὶ τὸ  
 καθαρώτατον διεῖ καὶ ἐξουρεῖται, τὸ δὲ παχύ-  
 τατον καὶ θολωδέστατον συστρέφεται καὶ συμπή-  
 γνυται. καὶ<sup>1</sup> τὸ μὲν πρῶτον μικρόν, ἔπειτα δὲ  
 μέζον γίνεται. κυλινδρεύμενον γὰρ ὑπὸ τοῦ οὔρου,  
 ὃ τι ἂν συνίστηται παχύ, συναρμόζει πρὸς ἐσωτό,  
 καὶ οὕτως αὔξεται τε καὶ πωροῦται· καὶ ὁκόταν  
 οὖρῃ, πρὸς τὸν στόμαχον τῆς κύστιος προσπίπτει  
 ὑπὸ τοῦ οὔρου βιαζόμενον καὶ κωλύει οὔρεϊν καὶ  
 40 ὀδύνην παρέχει ἰσχυρὴν· ὥστε τὰ αἰδοῖα τρίβουσι  
 καὶ ἔλκουσι τὰ παιδιά τὰ λιθιώντα· δοκεῖ γὰρ  
 αὐτοῖς τὸ αἷτιον ἐνταῦθα εἶναι τῆς οὐρήσιος.<sup>2</sup>  
 τεκμήριον δέ, ὅτι οὕτως ἔχει· τὸ γὰρ οὖρον  
 λαμπρότατον οὔρέουσιν οἱ λιθιώντες, ὅτι τὸ  
 παχύτατον καὶ θολωδέστατον αὐτοῦ μένει καὶ  
 συστρέφεται. τὰ μὲν πλεῖστα οὕτω λιθιά·  
 γίνεται δὲ παισὶν καὶ ἀπὸ τοῦ γάλακτος, ἣν μὴ  
 ὑγιερὸν ᾖ, ἀλλὰ θερμόν τε λίην καὶ χολώδες.  
 τὴν γὰρ κοιλίην διαθερμαίνει καὶ τὴν κύστιν,  
 50 ὥστε τὸ οὖρον συγκαίόμενον ταῦτα πάσχειν. καὶ  
 φημι ἄμεινον εἶναι τοῖς παιδίοις τὸν οἶνον ὥς  
 ὑδαρέςτατον διδόναι· ἦσσαν γὰρ τὰς φλέβας  
 συγκαίει καὶ συναναίνει. τοῖσι δὲ θήλεσι λίθοι  
 οὐ γίνονται ὁμοίως· ὁ γὰρ οὐρητῆρ βραχύς ἐστιν  
 ὁ τῆς κύστιος καὶ εὐρύς, ὥστε βιάζεσθαι τὸ οὖρον  
 ῥηϊδίως. οὔτε γὰρ τῇ χειρὶ τρίβει τὸ αἰδοῖον

solid matter forms in their bladder. But feverishness of the bowels must be accompanied by feverishness of the bladder. For when it is abnormally heated its mouth is inflamed. In this condition it does not expel the urine, but concocts and heats it within itself. The finest part is separated off, and the clearest passes out as urine, while the thickest and muddiest part forms solid matter, which, though at first small, grows in course of time. For as it rolls about in the urine it coalesces with whatever solid matter forms, and so it grows and hardens. When the patient makes water, it is forced by the urine to fall against the mouth of the bladder, and staying the flow of the urine causes violent pain. So that boys that suffer from stone rub and pull at their privy parts, under the impression that there lies the cause of their making water.<sup>1</sup> That my account is correct is shown by the fact that sufferers from stone emit urine that is very clear, as the thickest and muddiest part of it remains and solidifies. This in most cases is the cause of stone. Children get stone also from the milk, if it be unhealthy, too hot and bilious. For it heats the bowels and the bladder, so that the urine is heated and affected as I have described. And my opinion is that we should give to young children only very diluted wine, which heats and parches the veins less. Females suffer less from stone. For their urethra is short and broad, so that the urine is easily expelled. Nor do they rub the privy parts as do males, nor handle the

<sup>1</sup> Coray's emendation would mean, "the cause of the stoppage," an attractive alteration.

<sup>1</sup> καὶ added by Wilamowitz.

<sup>2</sup> Coray would insert οὐκ before οὐρήσιος.

ὥσπερ τὸ ἄρσεν, οὔτε ἄπτεται τοῦ οὐρητῆρος· ἐς γὰρ τὰ αἰδοῖα ξυντέτρηνται, οἱ δὲ ἄνδρες οὐκ εὐθὺ τέτρηνται, καὶ διότι οἱ οὐρητῆρες οὐκ εὐρεῖς·  
 60 καὶ πίνουσι πλείον ἢ οἱ παῖδες.

X. Περὶ μὲν οὖν τούτων ὧδε ἔχει ἡ ὅτι τούτων ἐγγύτατα. περὶ δὲ τῶν ὥρέων ὧδε ἂν τις ἐνθυμεύμενος διαγινώσκῃ, ὁκοῖόν τι μέλλει ἔσεσθαι τὸ ἔτος, εἴτε νοσερὸν εἴτε ὑγιερὸν· ἦν μὲν γὰρ κατὰ λόγον γένηται τὰ σημεία ἐπὶ τοῖς ἀστροισι δύνουσί τε καὶ ἐπιτέλλουσιν, ἔν τε τῷ μετοπώρῳ ὕδατα γένηται, καὶ ὁ χειμὼν μέτριος καὶ μήτε λίην εὐδῖος μήτε ὑπερβάλλων τὸν καιρὸν τῷ ψύχει, ἔν τε τῷ ἡρι ὕδατα γένηται ὥραῖα καὶ ἐν  
 10 τῷ θέρει, οὕτω τὸ ἔτος ὑγιεινότατον εἰκὸς εἶναι. ἦν δὲ ὁ μὲν χειμὼν αὐχμηρὸς καὶ βόρειος γένηται, τὸ δὲ ἡρ ἔπομβρον καὶ νότιον, ἀνάγκη τὸ θέρος πυρετῶδες γίνεσθαι καὶ ὀφθαλμίας καὶ δυσεντερίας ἐμποιεῖν. ὁκόταν γὰρ τὸ πνῦγος ἐπιγένηται ἐξαίφνης τῆς τε γῆς ὑγρῆς ἐούσης ὑπὸ τῶν ὄμβρων τῶν ἑαρινῶν καὶ ὑπὸ τοῦ νότου, ἀνάγκη διπλόον τὸ καῦμα εἶναι, ἀπὸ τε τῆς γῆς διαβρόχου ἐούσης καὶ θερμῆς καὶ ὑπὸ τοῦ ἡλίου καίοντος, τῶν τε κοιλιῶν μὴ συνεστηκυῶν τοῖς ἀνθρώποις μήτε  
 20 τοῦ ἐγκεφάλου ἀνεξηρασμένου—οὐ γὰρ οἶον τε τοῦ ἥρος τοιούτου ἐόντος μὴ οὐ πλαδᾶν τὸ σῶμα καὶ τὴν σάρκα—· ὥστε τοὺς πυρετοὺς ἐπιπίπτειν ὀξυτάτους ἅπασιν, μάλιστα δὲ τοῖσι φλεγματίησι. καὶ δυσεντερίας εἰκὸς ἐστὶ γίνεσθαι καὶ τῇσι γυναιξὶ καὶ τοῖς εἶδεσι τοῖς ὑγροτάτοις. καὶ ἦν μὲν ἐπὶ κυνὸς ἐπιτολῇ ὕδωρ ἐπιγένηται καὶ χειμὼν καὶ οἱ ἐτησίαι πνεύσωσιν, ἐλπίς παύσασθαι καὶ τὸ μετόπωρον ὑγιερὸν γενέσθαι· ἦν δὲ μή, κίν-  
 98

## AIRS WATERS PLACES, ix.-x.

urethra. For it opens directly into the privy parts, which is not so with males, nor is their urethra wide. And they drink more than boys do.

X. This, or something very like this, is the truth concerning these matters. As to the seasons, a consideration of the following points will make it possible to decide whether the year will prove unhealthy or healthy. If the signs prove normal when the stars set and rise; if there be rains in autumn, if the winter be moderate, neither too mild nor unseasonably cold, and if the rains be seasonable in spring and in summer, the year is likely to be very healthy. If, on the other hand, the winter prove dry and northerly, the spring rainy and southerly, the summer cannot fail to be fever-laden, causing ophthalmia and dysenteries. For whenever the great heat comes on suddenly while the earth is soaked by reason of the spring rains and the south wind, the heat cannot fail to be doubled, coming from the hot, sodden earth and the burning sun; men's bowels not being braced nor their brain dried—for when spring is such the body and its flesh must necessarily be flabby—the fevers that attack are of the acutest type in all cases, especially among the phlegmatic. Dysenteries are also likely to come upon women and the most humid constitutions. If at the rising of the Dog Star stormy rain occurs and the Etesian winds blow, there is hope that the distempers will cease and that the autumn will be healthy. Otherwise there is danger lest deaths



- 30 δυνος θανάτους τε γενέσθαι τοῖσι παιδίοις καὶ  
 τῇσι γυναιξίν, τοῖσι δὲ πρεσβύτησιν ἥκιστα, τοὺς  
 τε περιγενομένους ἐς τεταρταίους ἀποτελευτᾶν  
 καὶ ἐκ τῶν τεταρταίων ἐς ὕδρωπας. ἦν δ' ὁ μὲν  
 χειμῶν νότιος γένηται καὶ ἔπομβρος καὶ εὖδιος,  
 τὸ δὲ ἦρ βόρειόν τε καὶ αὐχμηρὸν καὶ χειμέριον,  
 πρῶτον μὲν τὰς γυναῖκας, ὀκόσαι ἂν τύχωσιν ἐν  
 γαστρὶ ἔχουσαι καὶ ὁ τόκος αὐτῇσιν ἢ πρὸς τὸ  
 ἦρ, ἐκτιτρώσκεσθαι· ὀκόσαι δ' ἂν καὶ τέκωσιν,  
 ἀκρατέα τὰ παιδιά τίκτειν καὶ νοσώδεα, ὥστε ἡ  
 αὐτίκα ἀπόλλυσθαι, ἢ ζῶσι λεπτά τε ἔοντα καὶ  
 40 ἀσθενέα καὶ νοσώδεα. ταῦτα μὲν τῇσι γυναιξί·  
 τοῖσι δὲ λοιποῖσι δυσεντερίας καὶ ὀφθαλμίας  
 ξηρὰς καὶ ἐνίοις καταρρώους ἀπὸ τῆς κεφαλῆς  
 ἐπὶ τὸν πνεύμονα. τοῖσι μὲν οὖν φλεγματίησι  
 τὰς δυσεντερίας εἰκὸς γίνεσθαι καὶ τῇσι γυναιξὶ  
 φλέγματος ἐπικαταρρυσθέντος ἀπὸ τοῦ ἐγκεφάλου  
 διὰ τὴν ὑγρότητα τῆς φύσιος· τοῖσι δὲ χολώδεσιν  
 ὀφθαλμίας ξηρὰς διὰ τὴν θερμότητα καὶ ξηρότητα  
 τῆς σαρκός· τοῖσι δὲ πρεσβύτησι καταρρώους διὰ  
 τὴν ἀραιότητα καὶ τὴν ἑκτηξιν τῶν φλεβῶν,  
 50 ὥστε ἐξαίφνης τοὺς μὲν ἀπόλλυσθαι, τοὺς δὲ  
 παραπλήκτους γίνεσθαι τὰ δεξιὰ ἢ τὰ ἀριστερά.  
 ὀκόταν γὰρ τοῦ χειμῶνος ἔοντος νοτίου καὶ θερμοῦ  
 τοῦ σώματος μὴ συνιστῇται ὁ ἐγκέφαλος μηδὲ  
 αἱ φλέβες, τοῦ ἦρος ἐπιγενομένου βορείου καὶ  
 αὐχμηροῦ καὶ ψυχροῦ ὁ ἐγκέφαλος, ὀπηνίκα  
 αὐτὸν ἔδει ἅμα καὶ <sup>1</sup> τῷ ἦρι διαλύεσθαι καὶ καθαί-  
 ρεσθαι ὑπὸ τε κορύζης καὶ βράγχων, τηνικαῦτα  
 πῆγνυται τε καὶ συνίσταται, ὥστε ἐξαίφνης τοῦ  
 θέρεος ἐπιγενομένου καὶ τοῦ καύματος καὶ τῆς  
 60 μεταβολῆς ἐπιγινομένης ταῦτα τὰ νοσεύματα

## AIRS WATERS PLACES, x.

occur among the women and children, and least of all among the old men; and lest those that get better lapse into quartans, and from quartans into dropsies. But if the winter be southerly, rainy and mild, and the spring be northerly, dry and wintry, in the first place women with child whose delivery is due by spring suffer abortion; and if they do bring forth, their children are weak and sickly, so that either they die at once, or live puny, weak and sickly. Such is the fate of the women. The others have dysenteries and dry ophthalmia, and in some cases catarrhs descend from the head to the lungs. Phlegmatics are liable to dysenteries, and women also, phlegm running down from the brain because of the humidity of their constitution. The bilious have dry ophthalmia because of the warm dryness of their flesh. Old men have catarrhs because of their flabbiness and the wasting of their veins, so that some die suddenly, while others become paralyzed on the right side or the left. For whenever, owing to the winter being southerly and the body warm, neither brain nor veins are hardened, a northerly, dry, cold spring supervening, the brain, just at the time when it ought to have been relaxed along with spring and purged by cold in the head and hoarseness, congeals and hardens, so that the heat of summer having suddenly supervened and the change supervening, these diseases befall. Such

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<sup>1</sup> καὶ added by Coray.

## ΠΕΡΙ ΑΕΡΩΝ ΥΔΑΤΩΝ ΤΟΠΩΝ

ἐπιπίπτειν. καὶ ὁκόσαι μὲν τῶν πολλῶν κέονταί τε καλῶς τοῦ ἡλίου καὶ τῶν πνευμάτων ὕδασί τε χρέονται ἀγαθοῖσιν, αὗται μὲν ἡσσον αἰσθάνονται τῶν τοιούτων μεταβολέων· ὁκόσαι δὲ ὕδασί τε ἐλείοισι χρέονται καὶ λιμνώδεσι κέονταί τε μὴ καλῶς τῶν πνευμάτων καὶ τοῦ ἡλίου, αὗται δὲ μᾶλλον. κῆν μὲν τὸ θέρος αὐχμηρὸν γένηται, θᾶσσον παύονται αἱ νοῦσοι· ἦν δὲ ἔπομβρον, πολυχρόνιοι γίνονται· καὶ φαγεδαίνας κίνδυνος  
70 ἐγγίνεσθαι ἀπὸ πάσης προφάσιος, ἦν ἔλκος ἐγγένηται. καὶ λειεντερίαί καὶ ὕδρωπες τελευτῶσι τοῖσι νοσεύμασιν ἐπιγίνονται· οὐ γὰρ ἀποξηραίνονται αἱ κοιλίαι ῥηϊδίως. ἦν δὲ τὸ θέρος ἔπομβρον γένηται καὶ νότιον καὶ τὸ μετόπωρον, τὸν<sup>1</sup> χειμῶνα ἀνάγκη νοσερὸν εἶναι καὶ τοῖς φλεγματίησι καὶ τοῖς γεραιτέροισι τεσσαράκοντα ἐτέων καύσους γίνεσθαι εἰκός, τοῖσι δὲ χολώδεσι πλευρίτιδας καὶ περιπνευμονίας. ἦν δὲ τὸ θέρος αὐχμηρὸν γένηται καὶ βόρειον, τὸ δὲ μετόπωρον  
80 ἔπομβρον καὶ νότιον, κεφαλαλγίας ἐς τὸν χειμῶνα καὶ σφακέλους τοῦ ἐγκεφάλου εἰκός γίνεσθαι, καὶ προσέτι βράγχους καὶ κορύζας καὶ βήχας, ἐνίοισι δὲ καὶ φθίσιος. ἦν δὲ βόρειόν τε ἢ καὶ ἄνυδρον καὶ μήτε ὑπὸ κύνα ἔπομβρον μήτε ἐπὶ τῷ ἀρκτούρῳ, τοῖσι μὲν φλεγματίησι φύσει συμφέρεи μάλιστα καὶ τοῖς ὑγροῖς τὰς φύσιος καὶ τῇσι γυναιξί· τοῖσι δὲ χολώδεσι τοῦτο πολεμιώτατον γίνεται. λίην γὰρ ἀναξηραίνονται καὶ ὀφθαλμῖαι αὐτοῖσιν ἐπιγίνονται ξηραί, καὶ  
90 πυρετοὶ ὀξέες καὶ πολυχρόνιοι, ἐνίοισι δὲ καὶ μελαγχολίαί. τῆς γὰρ χολῆς τὸ μὲν ὑγρότατον καὶ ὑδαρέστατον ἀναξηραίνεται καὶ ἀναλίσκεται,

## AIRS WATERS PLACES, x.

cities as are well situated with regard to sun and winds, and use good waters, are less affected by such changes ; but if they use marshy or standing waters, and are not well situated with regard to winds and sun, they are more affected. If the summer prove dry, the diseases cease more quickly ; if it be rainy, they are protracted. Sores are apt to fester from the slightest cause. Lienteries and dropsies supervene on the conclusion of the diseases, as the bowels do not readily dry up. If the summer and the autumn be rainy and southerly, the winter must be unhealthy ; phlegmatics and men over forty are likely to suffer from ardent fevers, bilious people from pleurisy and pneumonia. If the summer prove dry and northerly, and the autumn rainy and southerly, it is likely that in winter headaches occur and mortifications of the brain,<sup>1</sup> and in addition hoarseness, colds in the head, coughs, and in some cases consumption as well. But if the weather be northerly and dry, with no rain either during the Dog Star or at Arcturus, it is very beneficial to those who have a phlegmatic or humid constitution, and to women, but it is very harmful to the bilious. For these dry up overmuch, and are attacked by dry ophthalmia and by acute, protracted fevers, in some cases too by melancholies. For the most humid and watery part of the bile is dried up and is spent, while the

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<sup>1</sup> See Littré V. 581 foll.

<sup>1</sup> τὸν added by Wilamowitz.

τὸ δὲ παχύτατον καὶ δριμύτατον λείπεται καὶ τοῦ αἵματος κατὰ τὸν αὐτὸν λόγον· ἀφ' ὧν ταῦτα τὰ νοσεύματα αὐτοῖσι γίνεται. τοῖσι δὲ φλεγματίησι πάντα ταῦτα ἀρωγά ἐστίν. ἀποξηραίνονται γὰρ καὶ ἐς τὸν χειμῶνα ἀφικνέονται οὐ  
98 πλαδῶντες, ἀλλὰ ἀναξηραίνόμενοι.

XI. Κατὰ ταῦτά τις ἐννοεῦμενος καὶ σκοπεύμενος προειδείη ἂν τὰ πλεῖστα τῶν μελλόντων ἔσεσθαι ἀπὸ τῶν μεταβολέων. φυλάσσεσθαι δὲ χρὴ μάλιστα τὰς μεταβολὰς τῶν ὥρέων τὰς μεγίστας καὶ μήτε φάρμακον διδόναι ἐκόντα μήτε καίειν ὃ τι ἐς κοιλίην μήτε τάμνειν, πρὶν παρέλθωσιν ἡμέραι δέκα ἢ καὶ πλείονες· μέγισται δὲ εἰσιν αἶδε αἱ τέσσαρες<sup>1</sup> καὶ ἐπικινδυνόταται· ἡλίου τροπαὶ ἀμφοτέραι καὶ μᾶλλον αἱ θεριναὶ  
10 καὶ αἱ ἰσημερίαι νομιζόμεναι εἶναι ἀμφοτέραι, μᾶλλον δὲ αἱ μετοπωριναί· δεῖ δὲ καὶ τῶν ἄστρον τὰς ἐπιτολὰς φυλάσσεσθαι καὶ μάλιστα τοῦ κυνός, ἔπειτα ἀρκτούρου, καὶ ἔτι πληιάδων δύσιν. τά τε γὰρ νοσεύματα μάλιστα ἐν ταύτησι τῇσιν ἡμέρησιν κρίνεται. καὶ τὰ μὲν ἀποφθίνει, τὰ δὲ λήγει, τὰ δὲ ἄλλα πάντα μεθίσταται ἐς ἕτερον  
17 εἶδος καὶ ἐτέρην κατάστασιν.

XII. Περὶ μὲν τούτων οὕτως ἔχει. βούλομαι δὲ περὶ τῆς Ἀσίας καὶ τῆς Εὐρώπης δεῖξαι ὁκόσον διαφέρουσιν ἀλλήλων ἐς τὰ πάντα καὶ περὶ τῶν ἐθνέων τῆς μορφῆς, ὅτι διαλλάσσει καὶ μηδὲν ἔοικεν ἀλλήλοισιν. περὶ μὲν οὖν ἀπάντων πολὺς ἂν εἴη λόγος, περὶ δὲ τῶν μεγίστων καὶ πλεῖστον διαφερόντων ἐρέω ὥς μοι δοκεῖ ἔχειν. τὴν Ἀσίην πλεῖστον διαφέρειν φημὶ τῆς Εὐρώπης

thickest and most acrid part is left, and similarly with the blood. Consequently these diseases come upon them. But all these conditions are helpful to the phlegmatic, for they dry up and reach winter dried up and not flabby.

XI. By studying and observing after this fashion one may foresee most of the consequences of the changes. One should be especially on one's guard against the most violent changes of the seasons, and unless compelled one should neither purge, nor apply cauterly or knife to the bowels, before at least ten days are past. The following are the four most violent changes and the most dangerous:—both solstices, especially the summer solstice, both the equinoxes, so reckoned, especially the autumnal. One must also guard against the risings of the stars, especially of the Dog Star, then of Arcturus, and also of the setting of the Pleiades. For it is especially at these times that diseases come to a crisis. Some prove fatal, some come to an end, all others change to another form and another constitution.

XII. So much for the changes of the seasons. Now I intend to compare Asia<sup>1</sup> and Europe, and to show how they differ in every respect, and how the nations of the one differ entirely in physique from those of the other. It would take too long to describe them all, so I will set forth my views about the most important and the greatest differences. I hold that Asia differs very widely from Europe in the

\* <sup>1</sup> That is, Asia Minor.

<sup>1</sup> αἶδε αἱ τέσσαρες Kühlewein: αἱ τέσσαρες B: αἱ δέκα V: αἶδε καὶ ἐπικινδυνόταται Coray and Littre, perhaps rightly.

## ΠΕΡΙ ΑΕΡΩΝ ΥΔΑΤΩΝ ΤΟΠΩΝ

- 10 ἐς τὰς φύσεις τῶν συμπάντων τῶν τε ἐκ τῆς γῆς φυομένων καὶ τῶν ἀνθρώπων. πολὺ γὰρ καλλίονα καὶ μέζονα πάντα γίνεται ἐν τῇ Ἀσίῃ, ἢ τε χώρα τῆς χώρας ἡμερωτέρη καὶ τὰ ἥθεα τῶν ἀνθρώπων ἡπιώτερα καὶ εὐοργητότερα. τὸ δὲ αἷτιον τούτων ἡ κρήσις τῶν ὠρέων, ὅτι τοῦ ἡλίου ἐν μέσῳ τῶν ἀνατολέων κεῖται πρὸς τὴν ἡῶ τοῦ τε ψυχροῦ πορρωτέρω. τὴν δὲ αὖξισιν καὶ ἡμερότητα παρέχει πλεῖστον ἀπάντων, ὁκόταν μηδὲν ἢ ἐπικρατέον βιαίως, ἀλλὰ παντὸς ἰσομοιρίῃ δυναστεύῃ. ἔχει δὲ κατὰ τὴν Ἀσίην οὐ πανταχῇ ὁμοίως, ἀλλ' ὅση μὲν τῆς χώρας ἐν μέσῳ κεῖται τοῦ θερμοῦ καὶ τοῦ ψυχροῦ, αὕτη μὲν εὐκαρποτάτη ἐστὶ καὶ εὐδενδροτάτη καὶ εὐδιστάτη καὶ ὕδασι καλλίστοις κέχρηται τοῖσί τε οὐρανίοις καὶ τοῖς ἐκ τῆς γῆς. οὔτε γὰρ ὑπὸ τοῦ θερμοῦ ἐκκέκασται λίην οὔτε ὑπὸ αὐχμῶν καὶ ἀνδρίας ἀναξηραίνεται, οὔτε ὑπὸ ψύχεος βεβιασμένα οὔτε νοτία τε καὶ διάβροχος ἐστὶν ὑπὸ τε ὄμβρων πολλῶν καὶ χιόνος· τὰ τε ὥραϊα αὐτόθι πολλὰ εἰκὸς γίνεσθαι, ὁκόσα τε ἀπὸ
- 30 σπερμάτων καὶ ὁκόσα αὐτὴ ἡ γῆ ἀναδιδόει φυτά, ὧν τοῖς καρποῖσι χρέονται ἄνθρωποι, ἡμεροῦντες ἐξ ἀγρίων καὶ ἐς ἐπιτήδειον μεταφυτεύοντες· τὰ τε ἐντρεφόμενα κτήνεα εὐθηνεῖν εἰκὸς, καὶ μάλιστα τίκτειν τε πυκνότατα καὶ ἐκτρέφειν κάλλιστα· τοὺς τε ἀνθρώπους εὐτραφέας εἶναι καὶ τὰ εἶδεα καλλίστους καὶ μεγέθει μεγίστους καὶ ἡκιστα διαφόρους ἐς τὰ τε εἶδεα αὐτῶν καὶ τὰ μεγέθεα· εἰκὸς τε τὴν χώραν ταύτην τοῦ ἥρος ἐγγύτατα εἶναι κατὰ τὴν φύσιν καὶ τὴν μετρι-
- 40 ότητα τῶν ὠρέων. τὸ δὲ ἀνδρεῖον καὶ τὸ ταλαί-

nature of all its inhabitants and of all its vegetation. For everything in Asia grows to far greater beauty and size; the one region is less wild than the other, the character of the inhabitants is milder and more gentle. The cause of this is the temperate climate, because it lies towards the east midway between the risings<sup>1</sup> of the sun, and farther away than is Europe from the cold. Growth and freedom from wildness are most fostered when nothing is forcibly predominant, but equality in every respect prevails. Asia, however, is not everywhere uniform; the region, however, situated midway between the heat and the cold is very fruitful, very wooded and very mild; it has splendid water, whether from rain or from springs. While it is not burnt up with the heat nor dried up by drought and want of water, it is not oppressed with cold, nor yet damp and wet with excessive rains and snow. Here the harvests are likely to be plentiful, both those from seed and those which the earth bestows of her own accord, the fruit of which men use, turning wild to cultivated and transplanting them to a suitable soil. The cattle too reared there are likely to flourish, and especially to bring forth the sturdiest young and rear them to be very fine creatures.<sup>2</sup> The men will be well nourished, of very fine physique and very tall, differing from one another but little either in physique or stature. This region, both in character and in the mildness of its seasons, might fairly be said to bear a close resemblance to spring.

<sup>1</sup> That is, the winter rising and the summer rising.

<sup>2</sup> Or, if *πυκνότερα* and *κάλλιστα* be adverbs, "they are very prolific and the best of mothers."



## ΠΕΡΙ ΑΕΡΩΝ ΥΔΑΤΩΝ ΤΟΠΩΝ

πωρον<sup>1</sup> καὶ τὸ ἔμπονον καὶ τὸ θυμοειδὲς οὐκ ἂν  
 δύναιτο ἐν τοιαύτῃ φύσει ἐγγίνεσθαι οὔτε<sup>2</sup> ὁμο-  
 φύλου οὔτε<sup>2</sup> ἄλλοφύλου, ἀλλὰ τὴν ἡδονὴν ἀνάγκη  
 κρατεῖν . . . . . διότι πολύμορφα γίνεται τὰ ἐν  
 45 τοῖς θηρίοις.

XIII. Περὶ μὲν οὖν Αἰγυπτίων καὶ Λιβύων  
 οὕτως ἔχειν μοι δοκεῖ. περὶ δὲ τῶν ἐν δεξιῇ τοῦ  
 ἡλίου τῶν ἀνατολέων τῶν θερινῶν<sup>3</sup> μέχρι Μαιώ-  
 τιδος λίμνης—οὗτος γὰρ ὅρος τῆς Εὐρώπης καὶ  
 τῆς Ἀσίας—ὧδε ἔχει περὶ αὐτῶν· τὰ δὲ ἔθνεα  
 ταῦτα ταύτῃ<sup>4</sup> διάφορα αὐτὰ ἐωντῶν μᾶλλον ἐστὶ  
 τῶν προδιηγημένων διὰ τὰς μεταβολὰς τῶν  
 ὥρέων καὶ τῆς χώρας τὴν φύσιν. ἔχει δὲ καὶ  
 κατὰ τὴν γῆν ὁμοίως ἅπερ καὶ κατὰ τοὺς ἄλλους  
 10 ἀνθρώπους. ὅκου γὰρ αἱ ὥραι μεγίστας μετα-  
 βολὰς ποιεῖονται καὶ πυκνοτάτας, ἐκεῖ καὶ ἡ  
 χώρα ἀγριωτάτη καὶ ἀνωμαλωτάτη ἐστὶ, καὶ  
 εὐρήσεις ὄρεα τε πλεῖστα καὶ δάσέα καὶ πεδία  
 καὶ λειμῶνας ἐόντας. ὅκου δὲ αἱ ὥραι μὴ μέγα  
 ἀλλάσσουν, ἐκείνοις ἡ χώρα ὁμαλωτάτη ἐστίν.  
 οὕτω δὲ ἔχει καὶ περὶ τῶν ἀνθρώπων, εἴ τις  
 βούλεται ἐνθυμεῖσθαι. εἰσὶ γὰρ φύσιες αἱ μὲν  
 ὄρεσιν εἰοικυῖαι δενδρώδεσί τε καὶ ἐφύδροισιν, αἱ  
 δὲ λεπτοῖσί τε καὶ ἀνύδροις, αἱ δὲ λειμακεστέροις  
 20 τε καὶ ἐλώδεσι, αἱ δὲ πεδίῳ τε καὶ ψιλῇ καὶ  
 ξηρῇ γῇ. αἱ γὰρ ὥραι αἱ μεταλλάσσουσai τῆς  
 μορφῆς τὴν φύσιν<sup>5</sup> εἰσὶ διάφοροι. ἦν δὲ

<sup>1</sup> ταλαίπωρον Littré: ἀταλαίπωρον MSS.

<sup>2</sup> οὔτε . . . . . οὔτε Littré from Galen's quotation: μήτε . . . . . μήτε MSS.

<sup>3</sup> τῶν θερινῶν Coray: τῶν χειμερινῶν most MSS.: omitted by J.B.

<sup>4</sup> It is probable that either ταῦτα or ταύτῃ should be deleted.

## AIRS WATERS PLACES, XII.—XIII.

Courage, endurance, industry and high spirit could not arise in such conditions either among the natives or among immigrants,<sup>1</sup> but pleasure must be supreme . . .<sup>2</sup> wherefore in the beasts they are of many shapes.

XIII. Such in my opinion is the condition of the Egyptians and Libyans. As to the dwellers on the right of the summer risings of the sun up to Lake Maeotis, which is the boundary between Europe and Asia, their condition is as follows. These nations are less homogeneous than those I have described, because of the changes of the seasons and the character of the region. The land is affected by them exactly as human beings in general are affected. For where the seasons experience the most violent and the most frequent changes,<sup>3</sup> the land too is very wild and very uneven; you will find there many wooded mountains, plains and meadows. But where the seasons do not alter much, the land is very even. So it is too with the inhabitants, if you will examine the matter. Some physiques resemble wooded, well-watered mountains, others light, dry land, others marshy meadows, others a plain of bare, parched earth. For the seasons which modify a physical frame differ; if the

<sup>1</sup> The writer is thinking of Asiatic natives and the Greek colonists on the coast of Asia Minor.

<sup>2</sup> There is a gap in the text here dealing with the Egyptians and Libyans.

<sup>3</sup> Or, more idiomatically, "the variations of climate are most violent and most frequent." The four changes at the end of the four seasons were only the most important of many μεταβολαί. See Chapter XI, and pp. 68, 69.

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<sup>5</sup> There is probably a gap in the text after φύσιν.

24 διάφοροι ἔωσι μέγα<sup>1</sup> σφέων αὐτέων, διαφοραὶ καὶ πλείονες γίνονται τοῖς εἵδεσι.

XIV. Καὶ ὁκόσα μὲν ὀλίγον διαφέρει τῶν ἐθνέων παραλείψω, ὁκόσα δὲ μεγάλα ἢ φύσει ἢ νόμῳ, ἐρέω περὶ αὐτῶν ὡς ἔχει. καὶ πρῶτον περὶ τῶν Μακροκεφάλων. τούτων γὰρ οὐκ ἔστιν ἄλλο ἔθνος ὁμοίας τὰς κεφαλὰς ἔχον οὐδέν· τὴν μὲν γὰρ ἀρχὴν ὁ νόμος αἰτιώτατος ἐγένετο τοῦ μήκος τῆς κεφαλῆς, νῦν δὲ καὶ ἡ φύσις συμβάλλεται τῷ νόμῳ. τοὺς γὰρ μακροτάτην ἔχοντας τὴν κεφαλὴν γενναιοτάτους ἡγέονται. ἔχει  
10 δὲ περὶ νόμου ὧδε· τὸ παιδίον ὁκόταν γένηται τάχιστα, τὴν κεφαλὴν αὐτοῦ ἔτι ἀπαλὴν ἐοῦσαν μαλθακοῦ ἐόντος ἀναπλάσσουνσι τῇσι χερσὶ καὶ ἀναγκάζουσιν εἰς τὸ μήκος αὔξεσθαι δεσμά τε προσφέροντες καὶ τεχνήματα ἐπιτήδεια, ὑφ' ὧν τὸ μὲν σφαιροειδὲς τῆς κεφαλῆς κακοῦται, τὸ δὲ μήκος αὔξεται. οὕτως τὴν ἀρχὴν ὁ νόμος κατειργάσατο, ὥστε ὑπὸ βίης τοιαύτην τὴν φύσιν γενέσθαι· τοῦ δὲ χρόνου προϊόντος ἐν φύσει ἐγένετο, ὥστε τὸν νόμον μηκέτι ἀναγκάζειν. ὁ γὰρ  
20 γόνος πανταχόθεν ἔρχεται τοῦ σώματος, ἀπὸ τε τῶν ὑγιερῶν ὑγιερὸς ἀπὸ τε τῶν νοσερῶν νοσερός. εἰ οὖν γίνονται ἐκ τε φαλακρῶν φαλακροὶ καὶ ἐκ γλαυκῶν γλαυκοὶ καὶ ἐκ διεστραμμένων στρεβλοὶ ὡς ἐπὶ τὸ πλῆθος, καὶ περὶ τῆς ἄλλης μορφῆς ὁ αὐτὸς λόγος, τί κωλύει καὶ ἐκ μακροκεφάλου μακροκέφαλον γίνεσθαι; νῦν δὲ ὁμοίως οὐκέτι γίνονται ὡς πρότερον· ὁ γὰρ νόμος οὐκέτι  
28 ἰσχύει διὰ τὴν ὁμιλίην τῶν ἀνθρώπων.

<sup>1</sup> μέγα Coray : μετὰ MSS.

differences be great, the more too are the differences in the shapes.

XIV. The races that differ but little from one another I will omit, and describe the condition only of those which differ greatly, whether it be through nature or through custom. I will begin with the Longheads.<sup>1</sup> There is no other race at all with heads like theirs. Originally custom was chiefly responsible for the length of the head, but now custom is reinforced by nature. Those that have the longest heads they consider the noblest, and their custom is as follows. As soon as a child is born they remodel its head with their hands, while it is still soft and the body tender, and force it to increase in length by applying bandages and suitable appliances, which spoil the roundness of the head and increase its length. Custom originally so acted that through force such a nature came into being; but as time went on the process became natural, so that custom no longer exercised compulsion. For the seed comes from all parts of the body, healthy seed from healthy parts, diseased seed from diseased parts. If, therefore, bald parents have for the most part bald children, grey-eyed parents grey-eyed children, squinting parents squinting children, and so on with other physical peculiarities, what prevents a long-headed parent having a long-headed child?<sup>2</sup> At the present time long-headedness is less common than it was, for owing to intercourse with other men the custom is less prevalent.

<sup>1</sup> Practically nothing more is told us about this race by our other authorities, Pliny, Harpocration and Suidas. But see Littré IV., xi. and xii.

<sup>2</sup> Modern biologists hold that acquired characteristics are not inherited.

- XV. Περὶ μὲν οὖν τούτων οὕτως ἔχειν μοι δοκεῖ. περὶ δὲ τῶν ἐν Φάσει· ἡ χώρα ἐκείνη ἐλώδης ἐστὶ καὶ θερμὴ καὶ ὑδατεινὴ καὶ δασεῖα, ὄμβροι τε αὐτόθι γίνονται πᾶσαν ὥρην πολλοὶ τε καὶ ἰσχυροί· ἢ τε δίαίτα τοῖς ἀνθρώποις ἐν τοῖς ἔλεσιν ἐστίν, τὰ τε οἰκήματα ξύλινα καὶ καλάμινα ἐν τοῖς ὕδασι μεμηχανημένα· ὀλίγη τε χρέονται<sup>1</sup> βαδίσει κατὰ τὴν πόλιν καὶ τὸ ἐμπόριον, ἀλλὰ μονοξύλοις διαπλεύουσιν ἄνω καὶ
- 10 κάτω· διώρυγες γὰρ πολλαὶ εἰσι. τὰ δὲ ὕδατα θερμὰ καὶ στάσιμα πίνουσιν ὑπὸ τε τοῦ ἡλίου σηπόμενα καὶ ὑπὸ τῶν ὀμβρῶν ἐπαυξόμενα. αὐτός τε ὁ Φᾶσις στασιμώτατος πάντων τῶν ποταμῶν καὶ ῥέων ἡπιώτατα. οἳ τε καρποὶ οἱ<sup>2</sup> γινόμενοι αὐτόθι πάντες ἀναλδέες εἰσὶ καὶ τεθληυσμένοι καὶ ἀτελέες ὑπὸ πολυπληθείης τοῦ ὕδατος· διὸ καὶ οὐ πεπαίνονται. ἡὲρ τε πολὺς κατέχει τὴν χώραν ἀπὸ τῶν ὑδάτων. διὰ ταύτας δὴ τὰς προφάσις τὰ εἶδεα ἀπηλλαγμένα τῶν
- 20 λοιπῶν ἀνθρώπων ἔχουσιν οἱ Φασιηνοί· τὰ τε γὰρ μεγέθεα μεγάλοι, τὰ πάχεα δ' ὑπερπάχητες, ἄρθρον τε κατάδηλον οὐδὲν οὐδὲ φλέψ· τὴν τε χροὴν ὠχρὴν ἔχουσιν ὥσπερ ὑπὸ ἰκτέρου ἐχόμενοι· φθέγγονται τε βαρύτατον ἀνθρώπων, τῷ ἡέρι χρεώμενοι οὐ λαμπρῷ, ἀλλὰ νοτῶδει<sup>3</sup> καὶ θολερῷ· πρὸς τε τὸ ταλαιπωρεῖν τὸ σῶμα ἀργότεροι πεφύκασιν. αἳ τε ὦραι οὐ πολὺ μεταλλάσσουν οὔτε πρὸς τὸ πνίγος οὔτε πρὸς τὸ ψύχος. τὰ τε πνεύματα τὰ<sup>4</sup> πολλὰ νότια πλὴν αὐρῆς
- 30 μῆς ἐπιχωρίης. αὕτη δὲ πνεῖ ἐνίοτε βίαιος καὶ χαλεπὴ καὶ θερμὴ· καὶ κέγχρονα ὀνομάζουσι

## AIRS WATERS PLACES, xv.

XV. These are my opinions about the Longheads. Now let me turn to the dwellers on the Phasis. Their land is marshy, hot, wet, and wooded; copious violent rains fall there during every season. The inhabitants live in the marshes, and their dwellings are of wood and reeds, built in the water. They make little use of walking in the city and the harbour, but sail up and down in dug-outs made from a single log, for canals are numerous. The waters which they drink are hot and stagnant, putrefied by the sun and swollen by the rains. The Phasis itself is the most stagnant and most sluggish of all rivers. The fruits that grow in this country are all stunted, flabby and imperfect, owing to the excess of water, and for this reason they do not ripen. Much fog from the waters envelops the land. For these causes, therefore, the physique of the Phasians is different from that of other folk. They are tall in stature, and of a gross habit of body, while neither joint nor vein is visible. Their complexion is yellowish, as though they suffered from jaundice. Of all men they have the deepest voice, because the air they breathe is not clear, but moist and turbid. They are by nature disinclined for physical fatigue. There are but slight changes of the seasons, either in respect of heat or of cold. The winds are mostly moist, except one breeze peculiar to the country, called *cenchron*, which sometimes blows strong, violent

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<sup>1</sup> Before βαδῖσαι Coray inserts τῆ, probably rightly.

<sup>2</sup> οἱ added by Coray.

<sup>3</sup> νοτῶδαι καὶ θολερῶ b: χυτῶδαι τε καὶ διερῶ V.

<sup>4</sup> τὰ added by Coray.

τοῦτο τὸ πνεῦμα. ὁ δὲ βορέης οὐ σφόδρα ἀφ-  
 33 ικνεῖται· ὁκόταν δὲ πνέῃ, ἀσθενὴς καὶ βληχρὸς.

XVI. Καὶ περὶ μὲν τῆς φύσιος τῆς διαφορῆς καὶ  
 τῆς μορφῆς τῶν ἐν τῇ Ἀσίῃ καὶ τῇ Εὐρώπῃ οὕτως  
 ἔχει. περὶ δὲ τῆς ἀθυμίας τῶν ἀνθρώπων καὶ τῆς  
 ἀνανδρείης, ὅτι ἀπολεμώτεροί εἰσι τῶν Εὐρωπαίων  
 οἱ Ἀσιηνοὶ καὶ ἡμερώτεροι τὰ ἥθεα αἱ ὥραι αἵτιαι  
 μάλιστα, οὐ μεγάλας τὰς μεταβολὰς ποιεῦμεναι  
 οὔτε ἐπὶ τὸ θερμὸν οὔτε ἐπὶ τὸ ψυχρόν, ἀλλὰ  
 παραπλησίως.<sup>1</sup> οὐ γὰρ γίνονται ἐκπλήξεις τῆς  
 γνώμης οὔτε μετὰστασις ἰσχυρὴ τοῦ σώματος,  
 10 ἀφ' ὅτων εἰκὸς τὴν ὀργὴν ἀγριοῦσθαι τε καὶ τοῦ  
 ἀγνώμονος καὶ θυμοειδέος μετέχειν μᾶλλον ἢ ἐν  
 τῷ αὐτῷ αἰεὶ ἔοντα. αἱ γὰρ μεταβολαὶ εἰσι τῶν  
 πάντων αἱ ἐπεγεύρουσαι τὴν γνώμην τῶν ἀνθ-  
 ρώπων καὶ οὐκ ἑῶσαι ἀτρεμίζειν. διὰ ταύτας  
 ἐμοὶ δοκεῖ τὰς προφάσιας ἀναλκῆς εἶναι τὸ γένος  
 τὸ Ἀσιηνὸν καὶ προσέτι διὰ τοὺς νόμους. τῆς  
 γὰρ Ἀσίης τὰ πολλὰ βασιλεύεται. ὅκου δὲ μὴ  
 αὐτοὶ ἑωυτῶν εἰσι καρτεροὶ οἱ ἄνθρωποι μὴδὲ  
 αὐτόνομοι, ἀλλὰ δεσπόζονται, οὐ περὶ τούτου  
 20 αὐτοῖσιν ὁ λόγος ἐστίν, ὅκως τὰ πολέμια ἀσκή-  
 σωσιν, ἀλλ' ὅκως μὴ δόξωσι μάχιμοι εἶναι. οἱ  
 γὰρ κίνδυνοι οὐχ ὁμοιοὶ εἰσι. τοὺς μὲν γὰρ στρα-  
 τεύεσθαι εἰκὸς καὶ ταλαιπωρεῖν καὶ ἀποθνήσκειν  
 ἐξ ἀνάγκης ὑπὲρ τῶν δεσποτέων ἀπὸ τε παιδίων  
 καὶ γυναικὸς ἔοντας καὶ τῶν λοιπῶν φίλων. καὶ  
 ὁκόσα μὲν ἂν χρηστὰ καὶ ἀνδρεῖα ἐργάσωνται, οἱ  
 δεσπότηαι ἀπ' αὐτῶν αὔξονται τε καὶ ἐκφύονται,  
 τοὺς δὲ κινδύνους καὶ θανάτους αὐτοὶ καρποῦνται.  
 ἔτι δὲ πρὸς τούτοις τῶν τοιούτων ἀνθρώπων

and hot. The north wind rarely blows, and when it does it is weak and gentle.

XVI. So much for the difference, in nature and in shape, between the inhabitants of Asia and the inhabitants of Europe. With regard to the lack of spirit and of courage among the inhabitants, the chief reason why Asiatics are less warlike and more gentle in character than Europeans is the uniformity of the seasons, which show no violent changes either towards heat or towards cold, but are equable. For there occur no mental shocks nor violent physical change, which are more likely to steel the temper and impart to it a fierce passion than is a monotonous sameness. For it is changes of all things that rouse the temper of man and prevent its stagnation. For these reasons, I think, Asiatics are feeble. Their institutions are a contributory cause, the greater part of Asia being governed by kings. Now where men are not their own masters and independent, but are ruled by despots, they are not keen on military efficiency but on not appearing warlike. For the risks they run are not similar. Subjects are likely to be forced to undergo military service, fatigue and death, in order to benefit their masters, and to be parted from their wives, their children and their friends. All their worthy, brave deeds merely serve to aggrandize and raise up their lords, while the harvest they themselves reap is danger and death. Moreover, the land of men like these

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<sup>1</sup> παραπλησίως Galen and Littré: παραπλήσιαi MSS.



- 30 ἀνάγκη ἐρημῶσθαι τὴν γῆν ὑπὸ τε πολεμίων<sup>1</sup> καὶ ἀργίης, ὥστε καὶ εἴ τις φύσει πέφυκεν ἀνδρείος καὶ εὐψυχος, ἀποτρέπεσθαι τὴν γνώμην ὑπὸ<sup>2</sup> τῶν νόμων. μέγα δὲ τεκμήριον τούτων· ὁκόσοι γὰρ ἐν τῇ Ἀσίῃ Ἕλληνες ἢ βάρβαροι μὴ δεσπόζονται, ἀλλ' αὐτόνομοί εἰσι καὶ ἐωντοῖσι ταλαιπωρεῦσιν, οὗτοι μαχιμώτατοί εἰσι πάντων· τοὺς γὰρ κινδύνους ἐωντῶν πέρι κινδυνεύουσι, καὶ τῆς ἀνδρείης αὐτοὶ τὰ ἄθλα φέρονται καὶ τῆς δειλίας τὴν ζημίην ὡσαύτως. εὐρήσεις δὲ καὶ τοὺς
- 40 Ἀσιηνοὺς διαφέροντας αὐτοὺς ἐωντῶν, τοὺς μὲν βελτίονας, τοὺς δὲ φαυλοτέρους ἔοντας. τούτων δὲ αἱ μεταβολαὶ αἵτιαι τῶν ὠρέων, ὥσπερ μοι
- 43 εἴρηται ἐν τοῖς προτέροισι.

XVII. Καὶ περὶ μὲν τῶν ἐν τῇ Ἀσίῃ οὕτως ἔχει. ἐν δὲ τῇ Εὐρώπῃ ἔστιν ἔθνος Σκυθικόν, ὃ περὶ τὴν λίμνην οἰκεῖ τὴν Μαιώτιν διαφέρον τῶν ἐθνέων τῶν ἄλλων. Σαυρομάται καλεῦνται. τούτων αἱ γυναῖκες ἱππάζονται τε καὶ τοξεύουσι καὶ ἀκοντίζουσιν ἀπὸ τῶν ἵππων καὶ μάχονται τοῖς πολεμίοις, ἕως ἂν παρθένοι ἔωσιν. οὐκ ἀποπαρθενεύνονται δέ, μέχρι ἂν τῶν πολεμίων τρεῖς ἀποκτείνωσι, καὶ οὐ πρότερον συνοικέουσιν ἢ περ

10 τὰ ἱερὰ θύσωσιν τὰ ἔννομα. ἡ δ' ἂν ἀνδρα ἐωντῇ ἄρηται, παύεται ἱππαζομένη, ἕως ἂν μὴ ἀνάγκη καταλάβῃ παγκοίνου στρατείας. τὸν δεξιὸν δὲ μαζὸν οὐκ ἔχουσι. παιδίους γὰρ ἐοῦσιν ἔτι νηπίους αἱ μητέρες χαλκίον τετεχνημένον ἐπ' αὐτῷ τούτῳ

<sup>1</sup> ἐρημῶσθαι τὴν γῆν ὑπὸ τε πολεμίων most MSS.: ἡμεροῦσθαι τὴν ὀργὴν Zwinger; Ilberg would also read ἀπολεμιῶν from the ἀπολεμίων of V 13.

## AIRS WATERS PLACES, XVI.—XVII.

must be desert, owing to their enemies and to their laziness,<sup>1</sup> so that even if a naturally brave and spirited man is born his temper is changed by their institutions. Whereof I can give a clear proof. All the inhabitants of Asia, whether Greek or non-Greek, who are not ruled by despots, but are independent, toiling for their own advantage, are the most warlike of all men. For it is for their own sakes that they run their risks, and in their own persons do they receive the prizes of their valour as likewise the penalty of their cowardice. You will find that Asiatics also differ from one another, some being superior, others inferior. The reason for this, as I have said above, is the changes of the seasons.

XVII. Such is the condition of the inhabitants of Asia. And in Europe is a Scythian race, dwelling round Lake Maeotis, which differs from the other races. Their name is Sauromatae. Their women, so long as they are virgins, ride, shoot, throw the javelin while mounted, and fight with their enemies. They do not lay aside their virginity until they have killed three of their enemies, and they do not marry before they have performed the traditional sacred rites. A woman who takes to herself a husband no longer rides, unless she is compelled to do so by a general expedition. They have no right breast; for while they are yet babies their mothers make

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<sup>1</sup> Or, reading *ἡμεροῦσθαι τὴν ὀργὴν ὑπὸ τε ἀπολεμίῳ κ.τ.λ.*, "the temper of men like these must be gentle, because they are unwarlike and inactive."

διάπυρον ποιέουσai πρὸς τὸν μαζὸν τιθέασι τὸν δεξιὸν καὶ ἐπικαίεται, ὥστε τὴν αὔξησιν φθείρεσθαι, ἐς δὲ τὸν δεξιὸν ὤμον καὶ βραχίονα πᾶσαν

18 τὴν ἰσχὺν καὶ τὸ πλήθος ἐκδιδόναι.

XVIII. Περὶ δὲ τῶν λοιπῶν Σκυθέων τῆς μορφῆς, ὅτι αὐτοὶ αὐτοῖσιν εἰκόασι καὶ οὐδαμῶς <sup>1</sup> ἄλλοις, ὡς τὸς λόγος καὶ περὶ τῶν Αἰγυπτίων, πλὴν ὅτι οἱ μὲν ὑπὸ τοῦ θερμοῦ εἰσι βεβιασμένοι, οἱ δὲ ὑπὸ τοῦ ψυχροῦ. ἡ δὲ Σκυθέων ἐρημὴ καλυμμένη πεδιάς ἐστι καὶ λειμακώδης καὶ ψιλὴ <sup>2</sup> καὶ ἔνυδρος μετρίως. ποταμοὶ γάρ εἰσι μεγάλοι, οἱ ἐξοχετεύουσι τὸ ὕδωρ ἐκ τῶν πεδίων. ἐνταῦθα καὶ οἱ Σκύθαι διαιτεῦνται, Νομάδες δὲ καλεῦνται,

10 ὅτι οὐκ ἔστιν οἰκήματα, ἀλλ' ἐν ἀμάξῃσιν οἰκεῦσιν. αἱ δὲ ἄμαξαί εἰσιν αἱ μὲν ἐλάχισται τετράκυκλοι, αἱ δὲ ἐξάκυκλοι· αὗται δὲ πῖλοις περιπεφραγμένοι· εἰσὶ δὲ καὶ τετεχνασμένοι ὥσπερ οἰκήματα τὰ μὲν διπλᾶ, τὰ δὲ τριπλᾶ. ταῦτα δὲ καὶ στεγνὰ πρὸς ὕδωρ καὶ πρὸς χιόνα καὶ πρὸς τὰ πνεύματα. τὰς δὲ ἀμάξας ἔλκουσι ζεύγεα τὰς μὲν δύο, τὰς δὲ τρία βοῶν κέρως ἄτερ. οὐ γὰρ ἔχουσι κέρατα ὑπὸ τοῦ ψύχεος. ἐν ταύτῃσι μὲν οὖν τῇσιν ἀμάξῃσιν αἱ <sup>3</sup> γυναῖκες διαιτεῦνται.

20 αὐτοὶ δ' ἐφ' ἵππων ὀχεῦνται οἱ ἄνδρες. ἔπονται δὲ αὐτοῖς καὶ τὰ πρόβατα τὰ <sup>4</sup> ἐόντα καὶ αἱ βόες καὶ οἱ ἵπποι. μένουσι δ' ἐν τῇ αὐτῇ τοσοῦτον χρόνον, ὅσον ἂν ἀποχρῇ αὐτοῖσι τοῖς κτήνεσιν ὁ χόρτος· ὁκόταν δὲ μηκέτι, ἐς ἐτέραν χώραν ἔρχονται. αὐτοὶ δ' ἐσθίουσι κρέα ἐφθὰ καὶ

<sup>1</sup> οὐδαμῶς MSS.: οὐδαμοῖς Wilamowitz.

<sup>2</sup> ψιλὴ most MSS.: ὑψηλὴ V B.

<sup>3</sup> αἱ added by Coray.

## AIRS WATERS PLACES, xvii.—xviii.

red-hot a bronze instrument constructed for this very purpose and apply it to the right breast and cauterise it, so that its growth is arrested, and all its strength and bulk are diverted to the right shoulder and right arm.

XVIII. As to the physique of the other Scythians, in that they are like one another and not at all like others, the same remark applies to them as to the Egyptians, only the latter are distressed by the heat, the former by the cold.<sup>1</sup> What is called the Scythian desert is level grassland, without trees,<sup>2</sup> and fairly well-watered. For there are large rivers which drain the water from the plains. There too live the Scythians who are called Nomads because they have no houses but live in wagons. The smallest have four wheels, others six wheels. They are covered over with felt and are constructed, like houses, sometimes in two compartments and sometimes in three, which are proof against rain, snow and wind. The wagons are drawn by two or by three yoke of hornless oxen. They have no horns because of the cold. Now in these wagons live the women, while the men ride alone on horseback, followed by the sheep they have, their cattle and their horses. They remain in the same place just as long as there is sufficient fodder for their animals; when it gives out they migrate. They themselves eat boiled

<sup>1</sup> Both people are of peculiar physique, and the cause of the peculiarity is in the one case extreme heat, and in the other extreme cold.

<sup>2</sup> Or, reading ὕψηλῇ, "a plateau."

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<sup>4</sup> τὰ added by Coray.

## ΠΕΡΙ ΑΕΡΩΝ ΥΔΑΤΩΝ ΤΟΠΩΝ

πίνουσι γάλα ἵππων. καὶ ἱππάκην τρώγουσι·  
 27 τοῦτο δ' ἐστὶ τυρὸς ἵππων.

XIX. Τὰ μὲν ἐς τὴν διαίταν αὐτῶν οὕτως ἔχει  
 καὶ τοὺς νόμους· περὶ δὲ τῶν ὥρέων καὶ τῆς  
 μορφῆς, ὅτι πολὺ ἀπῆλλακται τῶν λοιπῶν ἀν-  
 θρώπων τὸ Σκυθικὸν γένος καὶ ἔοικεν αὐτὸ ἐνυτῶ  
 ὥσπερ τὸ Αἰγύπτιον καὶ ἥκιστα πολύγονόν ἐστι,  
 καὶ ἡ χώρα ἐλάχιστα θηρία τρέφει κατὰ μέγεθος  
 καὶ πληθός. κείται γὰρ ὑπ' αὐτῆσι τῆσιν  
 ἄρκτοις καὶ τοῖς ὄρεσι τοῖς Ῥιπαίοισιν, ὅθεν ὁ  
 βορέης πνεῖ. ὃ τε ἥλιος τελευτῶν ἐγγύτατα  
 10 γίνεται, ὁκόταν ἐπὶ τὰς θερινὰς ἔλθῃ περιόδους,  
 καὶ τότε ὀλίγον χρόνον θερμαίνει καὶ οὐ σφόδρα·  
 τὰ δὲ πνεύματα τὰ ἀπὸ τῶν θερμῶν πνέοντα οὐκ<sup>1</sup>  
 ἀφικνεῖται, ἦν μὴ ὀλιγάκις καὶ ἀσθενέα, ἀλλ'  
 ἀπὸ τῶν ἄρκτων αἰεὶ πνέουσι πνεύματα ψυχρὰ  
 ἀπὸ τε χιόνος καὶ κρυστάλλου καὶ ὑδάτων πολ-  
 λῶν. οὐδέποτε δὲ τὰ ὄρεα ἐκλείπει· ἀπὸ τούτων  
 δὲ δυσοίκητά ἐστιν. ἡὲρ τε κατέχει πολὺς τῆς  
 ἡμέρης τὰ πεδία, καὶ ἐν τούτοισι<sup>2</sup> διαιτεῦνται·  
 ὥστε τὸν μὲν χειμῶνα αἰεὶ εἶναι, τὸ δὲ θέρος  
 20 ὀλίγας ἡμέρας καὶ ταύτας μὴ λίην. μετέωρα  
 γὰρ τὰ πεδία καὶ ψιλὰ καὶ οὐκ ἐστεφάνωνται  
 ὄρεσιν, ἀλλ' ἡ ἀνάντεα ἀπὸ<sup>3</sup> τῶν ἄρκτων· αὐτόθι  
 καὶ τὰ θηρία οὐ γίνεται μεγάλα, ἀλλ' οἷά τέ  
 ἐστὶν ὑπὸ γῆν σκεπάζεσθαι. ὁ γὰρ χειμὼν  
 κωλύει καὶ τῆς γῆς ἡ ψιλότης, ὅτι οὐκ ἔστιν  
 ἀλλῇ οὐδὲ σκέπη. αἱ δὲ<sup>4</sup> μεταβολαὶ τῶν ὥρέων

<sup>1</sup> οὐκ added by Littré from the Latin manuscript 7027.

<sup>2</sup> τούτοισι Reinhold : αὐτέοισι Littré from 7027 (illis).

<sup>3</sup> ἀλλ' ἡ ἀνάντεα ἀπὸ Kühlewein : ἀλλ' ἀνάτη ὑπὸ most MSS. : ἀλλ' ἡ ἀν τῇ ἀπὸ B : ἀλλ' ἡ αὐτῇ ἀπὸ V.

## AIRS WATERS PLACES, XVIII.—XIX.

meats and drink mares' milk. They have a sweet-meat called *hippace*, which is a cheese from the milk of mares (*hippoi*).

XIX. So much for their mode of living and their customs. As to their seasons and their physique, the Scythians are very different from all other men, and, like the Egyptians, are homogeneous; they are the reverse of prolific, and Scythia breeds the smallest and the fewest wild animals. For it lies right close to the north and the Rhipaeian mountains, from which blows the north wind. The sun comes nearest to them only at the end of its course, when it reaches the summer solstice, and then it warms them but slightly and for a short time. The winds blowing from hot regions do not reach them, save rarely, and with little force; but from the north there are constantly blowing winds that are chilled by snow, ice, and many waters,<sup>1</sup> which, never leaving the mountains, render them uninhabitable. A thick fog envelops by day the plains upon which they live, so that winter is perennial, while summer, which is but feeble, lasts only a few days. For the plains are high and bare, and are not encircled with mountains, though they slope from the north. The wild animals too that are found there are not large, but such as can find shelter under ground. They are stunted owing to the severe climate and the bareness of the land, where there is neither warmth<sup>2</sup> nor shelter. And the changes of the seasons are

<sup>1</sup> Or, "heavy rains."

<sup>2</sup> Strangely enough, both Littré and Adams translate as though they took ἀλέη to be the Epic word meaning "means of escape."

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<sup>4</sup> δὲ Wilamowitz : γὰρ MSS.

- οὐκ εἰσι μεγάλοι οὐδὲ ἰσχυραί, ἀλλ' ὁμοῖαι καὶ  
ὀλίγον μεταλλάσσουσιν· διότι καὶ τὰ εἶδεα  
ὁμοῖοι<sup>1</sup> αὐτοὶ ἐνωτοῖς εἰσι σίτῳ τε χρεώμενοι  
30 αἰεὶ ὁμοῖω ἐσθῆτί τε τῇ αὐτῇ καὶ θέρεος καὶ  
χειμῶνος, τὸν τε ἡέρα ὑδατεινὸν ἔλκοντες καὶ  
παχύν, τὰ τε ὕδατα πίνοντες ἀπὸ χιόνος καὶ  
παγετῶν, τοῦ τε ταλαιπώρου ἀπεόντες. οὐ γὰρ  
οἶόν τε τὸ σῶμα ταλαιπωρεῖσθαι οὐδὲ τὴν ψυχὴν,  
ὅκου μεταβολαὶ μὴ γίνονται ἰσχυραί. διὰ ταύτας  
τὰς ἀνάγκας τὰ εἶδεα αὐτῶν παχέα ἐστὶ καὶ  
σαρκώδεα καὶ ἄναρθρα καὶ ὑγρά καὶ ἄτονα, αἱ  
τε κοιλίαι ὑγρόταται πασέων κοιλιῶν αἱ κάτω.  
οὐ γὰρ οἶόν τε νηδὺν ἀναξηραίνεισθαι ἐν τοιαύτῃ  
40 χώρῃ καὶ φύσει καὶ ὥρης καταστάσει, ἀλλὰ διὰ  
πιμελήν τε καὶ ψιλὴν τὴν σάρκα τὰ ττε†<sup>2</sup> εἶδεα  
ἔοικεν ἀλλήλοισι τὰ τε ἄρσενα τοῖς ἄρσεσι καὶ  
τὰ θήλεα τοῖς θήλεσι. τῶν γὰρ ὥρέων παραπλη-  
σίων ἐουσέων φθοραὶ οὐκ ἐγγίνονται οὐδὲ κα-  
κώσεις ἐν τῇ τοῦ γόνου συμπήξει, ἣν μὴ τινος  
46 ἀνάγκης βιαίου τύχῃ ἢ νοῦσου.

- XX. Μέγα δὲ τεκμήριον ἐς τὴν ὑγρότητα παρ-  
έξομαι. Σκυθέων γὰρ τοὺς πολλοὺς, ἅπαντας<sup>3</sup>  
ὅσοι Νομάδες, εὐρήσεις κεκαυμένους τοὺς τε  
ὤμους καὶ τοὺς βραχίονας καὶ τοὺς καρπούς τῶν  
χειρῶν καὶ τὰ στήθεα καὶ τὰ<sup>4</sup> ἰσχία καὶ τὴν  
ὀσφύν δι' ἄλλ' οὐδὲν ἢ διὰ τὴν ὑγρότητα τῆς  
φύσιος καὶ τὴν μαλακίην. οὐ γὰρ δύνανται οὔτε  
τοῖς τόξοις συντείνειν οὔτε τῷ ἀκοντίῳ ἐμπίπτειν  
τῷ ὤμῳ ὑπὸ ὑγρότητος καὶ ἀτονίης. ὁκόταν δὲ  
10 καυθέωσιν, ἀναξηραίνεται ἐκ τῶν ἄρθρων τὸ πολὺ

<sup>1</sup> ὁμοῖοι αὐτοὶ Coray : ὁμοία αὐτὰ MSS.

## AIRS WATERS PLACES, XIX.—XX.

neither great nor violent, the seasons being uniform and altering but little. Wherefore the men also are like one another in physique, since summer and winter they always use similar food and the same clothing, breathing a moist, thick atmosphere, drinking water from ice and snow, and abstaining from fatigue. For neither bodily nor mental endurance is possible where the changes are not violent. For these causes their physiques are gross, fleshy, showing no joints, moist and flabby, and the lower bowels are as moist as bowels can be. For the belly cannot possibly dry up in a land like this, with such a nature and such a climate, but because of their fat and the smoothness of their flesh their physiques are similar, men's to men's and women's to women's. For as the seasons are alike there takes place no corruption or deterioration in the coagulation of the seed,<sup>1</sup> except through the blow of some violent cause or of some disease.

XX. I will give clear testimony to their moistness. The majority of the Scythians, all that are Nomads, you will find have their shoulders cauterized, as well as their arms, wrists, breast, hips and loins, simply because of the moistness and softness of their constitution. For owing to their moistness and flabbiness they have not the strength either to draw a bow or to throw a javelin from the shoulder. But when they have been cauterized the excess of moisture

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<sup>1</sup> As a modern physiologist might put it, "abnormal variations in the formation of the embryo."

<sup>2</sup> τε Wilamowitz would delete.

<sup>3</sup> πάντας most MSS.: μάλιστα B.

<sup>4</sup> καὶ τὰ added by Coray.



- τοῦ ὑγροῦ, καὶ ἐντονώτερα μάλλον γίνεται καὶ τροφिमώτερα καὶ ἡρθρωμένα τὰ σώματα μάλλον. ροϊκά δὲ γίνεται καὶ πλατέα, πρῶτον μὲν ὅτι οὐ σπαργανούνται ὥσπερ ἐν Αἰγύπτῳ ρυῖδὲ νομίζουσι<sup>1</sup> διὰ τὴν ἵππασίνην, ὅπως ἂν εὐεδροὶ ἔωσιν· ἔπειτα δὲ διὰ τὴν ἔδρην· τά τε γὰρ ἄρσενα, ἕως ἂν οὐχ οἶά τε ἐφ' ἵππου ὀχεῖσθαι, τὸ πολὺ τοῦ χρόνου κάθηνται ἐν τῇ ἀμάξῃ καὶ βραχὺ τῇ βαδίσει χρέονται διὰ τὰς μεταναστάσις καὶ περιελάσις·
- 20 τὰ δὲ θήλεα θαυμαστὸν οἶον ροϊκά ἐστὶ τε καὶ βραδέα<sup>2</sup> τὰ εἶδεα. πυρρὸν δὲ τὸ γένος ἐστὶ τὸ Σκυθικὸν διὰ τὸ ψῦχος, οὐκ ἐπιγινόμενον ὀξέος τοῦ ἡλίου. ὑπὸ δὲ τοῦ ψύχους ἡ λευκότης ἐπι-
- 24 καίεται καὶ γίνεται πυρρή.

- XXI. Πολύγονον δὲ οὐχ οἶον τε εἶναι φύσιν τοιαύτην. οὔτε γὰρ τῷ ἀνδρὶ ἡ ἐπιθυμία τῆς μείξις γίνεται πολλὴ διὰ τὴν ὑγρότητα τῆς φύσις καὶ τῆς κοιλίης τὴν μαλθακότητά τε καὶ τὴν ψυχρότητα, ἀφ' ὅτων ἤκιστα εἰκὸς ἄνδρα οἶον τε λαγνεύειν· καὶ ἔτι ὑπὸ τῶν ἵππων αἰεὶ κοπτόμενοι ἀσθενέες γίνονται ἐς τὴν μείξιν. τοῖσι μὲν ἀνδράσιν αὐταὶ αἱ προφάσιες γίνονται, τῇσι δὲ γυναιξὶν ἥ τε πιότης τῆς σαρκὸς καὶ ὑγρότης·
- 10 οὐ γὰρ δύνανται ἔτι συναρπάξειν αἱ μήτραι τὸν γόνον· οὔτε γὰρ ἐπιμήνιος κάθαρσις αὐτῇσι γίνεται ὥς χρεὼν ἐστίν, ἀλλ' ὀλίγον καὶ διὰ χρόνου, τό τε στόμα τῶν μητρέων ὑπὸ πιμελῆς συγκλείεται καὶ οὐχ ὑποδέχεται τὸν γόνον· αὐταὶ τε ἀταλαίπωροι καὶ πίεραὶ καὶ αἱ κοιλίαι ψυχραὶ

<sup>1</sup> Is there a gap in the text after νομίζουσι? οὐδὲ νομίζουσι adds nothing to οὐ σπαργανούνται, and requires an infinitive or some phrase to complete the sense. I once conjectured

dries up from their joints, and their bodies become more braced, more nourished and better articulated. Their bodies grow relaxed and squat, firstly because, unlike the Egyptians, they do not use swaddling clothes, of which they have not the habit,<sup>1</sup> for the sake of their riding, that they may sit a horse well; secondly, through their sedentary lives. For the boys, until they can ride, sit the greater part of the time in the wagon, and because of the migrations and wanderings rarely walk on foot; while the girls are wonderfully flabby and torpid in physique. The Scythians are a ruddy race because of the cold, not through any fierceness in the sun's heat. It is the cold that burns their white skin and turns it ruddy.

XXI. A constitution of this kind prevents fertility. The men have no great desire for intercourse because of the moistness of their constitution and the softness and chill of their abdomen, which are the greatest checks on venery. Moreover, the constant jolting on their horses unfits them for intercourse. Such are the causes of barrenness in the men; in the women they are the fatness and moistness of their flesh, which are such that the womb cannot absorb the seed. For neither is their monthly purging as it should be, but scanty and late, while the mouth of the womb is closed by fat and does not admit the seed. They are personally fat and lazy, and their

<sup>1</sup> This is a literal translation of the text, but see the footnote on the opposite page.

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*ὥσπερ οὐδ' ἐν Αἰγύπτῳ νομίζουσι*, and I find that Coray too has suggested this emendation, on the ground that it is unlikely that the Egyptians used swaddling clothes.

<sup>2</sup> *βοαδέα* **Β** b: *βλαδέα* Coray.

καὶ μαλθακαί. ὑπὸ<sup>1</sup> τούτων τῶν ἀναγκέων οὐ πολύγονόν ἐστι τὸ γένος τὸ Σκυθικόν. μέγα δὲ τεκμήριον αἱ οἰκέτιδες ποιέουσιν· οὐ γὰρ φθάνουσι παρὰ ἄνδρα ἀφικνεύμεναι καὶ ἐν γαστρὶ ἰσχουσιν  
20 διὰ τὴν ταλαιπωρίην καὶ ἰσχυρότητα τῆς σαρκός.

XXII. Ἔτι τε πρὸς τούτοιςιν εὐνουχίαι γίνονται οἱ<sup>2</sup> πλείστοι ἐν Σκύθησι καὶ γυναικεῖα ἐργάζονται καὶ ὥς αἱ γυναῖκες διαιτεῦνται<sup>3</sup> διαλέγονται τε ὁμοίως· καλεῦνται τε οἱ τοιοῦτοι Ἀναριεῖς.<sup>4</sup> οἱ μὲν οὖν ἐπιχώριοι τὴν αἰτίην προστιθέασι θεῷ καὶ σέβονται τούτους τοὺς ἀνθρώπους καὶ προσκυνέουσι, δεδοικότες περὶ ἑωυτῶν ἕκαστοι. ἐμοὶ δὲ καὶ αὐτῷ δοκεῖ ταῦτα τὰ πάθεα θεῖα εἶναι καὶ τᾶλλα πάντα καὶ οὐδὲν  
10 ἕτερον ἐτέρου θειότερον οὐδὲ ἀνθρωπινώτερον, ἀλλὰ πάντα ὁμοῖα καὶ πάντα θεῖα. ἕκαστον δὲ αὐτῶν ἔχει φύσιν τὴν ἑωυτοῦ καὶ οὐδὲν ἄνευ φύσιος γίνεται. καὶ τοῦτο τὸ πάθος ὥς μοι δοκεῖ γίνεσθαι φράσω· ὑπὸ τῆς ἵππασίης αὐτοὺς κέδματα λαμβάνει, ἅτε αἰεὶ κρεμαμένων ἀπὸ τῶν ἵππων τοῖς ποσίν· ἔπειτα ἀποχωλοῦνται καὶ ἐλκοῦνται τὰ ἰσχία, οἱ ἂν σφόδρα νοσήσωσιν. ἰῶνται δὲ σφᾶς αὐτοὺς τρόπῳ τοιῷδε. ὁκόταν γὰρ ἄρχηται ἡ νοῦσος, ὅπισθεν τοῦ ὠτὸς ἐκατέρου  
20 φλέβα τάμνουσιν. ὁκόταν δὲ ἀπορρυῇ τὸ αἷμα, ὕπνος ὑπολαμβάνει ὑπὸ ἀσθενείης καὶ καθεύδουσιν. ἔπειτα ἀνεγείρονται, οἱ μὲν τινες ὑγιέες εἶντες, οἱ δ' οὐ. ἐμοὶ μὲν οὖν δοκεῖ ἐν ταύτῃ τῇ ἰήσει διαφθεῖρεσθαι ὁ γόνος. εἰσὶ γὰρ παρὰ τὰ

<sup>1</sup> Before ὑπὸ the MSS. have καί, which Wilamowitz deletes.

## AIRS WATERS PLACES, XXI.—XXII.

abdomen is cold and soft. These are the causes which make the Scythian race unfertile. A clear proof is afforded by their slave-girls. These, because of their activity and leanness of body, no sooner go to a man than they are with child.

XXII. Moreover, the great majority among the Scythians become impotent, do women's work, live like women and converse accordingly. Such men they call Anaries. Now the natives put the blame on to Heaven, and respect and worship these creatures, each fearing for himself. I too think that these diseases are divine, and so are all others, no one being more divine or more human than any other; all are alike, and all divine. Each of them has a nature of its own, and none arises without its natural cause. How, in my opinion, this disease arises I will explain. The habit of riding causes swellings at the joints,<sup>1</sup> because they are always astride their horses; in severe cases follow lameness and sores on the hips. They cure themselves in the following way. At the beginning of the disease they cut the vein behind each ear. When the blood has ceased to flow faintness comes over them and they sleep. Afterwards they get up, some cured and some not. Now, in my opinion, by this treatment the seed is destroyed. For by the side of the ear are veins, to

<sup>1</sup> For this difficult word see Littré V. 320 and VIII. xxxix foll.

<sup>2</sup> Should not *oi* be deleted? It is unlikely that "the majority" were impotent, but "very many" might be.

<sup>3</sup> *διατείνονται* added by Gomperz.

<sup>4</sup> *Ἀναρίεις* Gomperz (cf. Herodotus I. 105): *ἀνδριείς* V: *ἀνανδριείς* B: *ἀναρδρεῖς* b.

ὧτα φλέβες, ἅς ἐάν τις ἐπιτάμη, ἄγονοι γίνονται οἱ ἐπιτμηθέντες. ταύτας τοίνυν μοι δοκέουσι τὰς φλέβας ἐπιτάμνειν. οἱ δὲ μετὰ ταῦτα ἐπειδὴν ἀφίκωνται παρὰ γυναῖκας καὶ μὴ οἰοί τ' ἔωσι χρήσθαι σφισιν, τὸ πρῶτον οὐκ ἐνθυμεῦνται, 30 ἀλλ' ἡσυχίην ἔχουσι. ὁκόταν δὲ δις καὶ τρις καὶ πλεονάκεις αὐτοῖσι πειρωμένοισι μηδὲν ἀλλοιότερον ἀποβαίῃ, νομίσαντές τι ἡμαρτηκένοι τῷ θεῷ, ὃν ἐπαιτιῶνται, ἐνδύονται στολὴν γυναικίην καταγνόντες ἑωυτῶν ἀνανδρείην. γυναικίζουσί τε καὶ ἐργάζονται μετὰ τῶν γυναικῶν ἃ καὶ ἐκεῖναι.

Τοῦτο δὲ πάσχουσι Σκυθέων οἱ πλούσιοι,<sup>1</sup> οὐχ οἱ κάκιστοι ἀλλ' οἱ εὐγενέστατοι καὶ ἰσχὺν πλείστην κεκτημένοι, διὰ τὴν ἵππασίην, οἱ δὲ πένητες 40 ἦσσαν· οὐ γὰρ ἱππάζονται. καίτοι ἐχρῆν, ἐπεὶ θειότερον τοῦτο τὸ νόσευμα τῶν λοιπῶν ἐστίν, οὐ τοῖς γενναιοτάτοις τῶν Σκυθέων καὶ τοῖς πλουσιωτάτοις προσπίπτειν μούνοις, ἀλλὰ τοῖς ἅπασιν ὁμοίως, καὶ μᾶλλον τοῖσιν ὀλίγα κεκτημένοισιν, εἰ δὴ τιμώμενοι<sup>2</sup> χαίρουσιν οἱ θεοὶ καὶ θαυμάζόμενοι ὑπ' ἀνθρώπων καὶ ἀντὶ τούτων χάριτας ἀποδιδόασιν. εἰκὸς γὰρ τοὺς μὲν πλουσίους θύειν 50 πολλὰ τοῖς θεοῖς καὶ ἀνατιθέναι ἀναθήματα ἑόντων χρημάτων πολλῶν καὶ τιμᾶν, τοὺς δὲ πένητας ἦσσαν διὰ τὸ μὴ ἔχειν, ἔπειτα καὶ ἐπιμεμφομένους ὅτι οὐ διδόασιν χρήματα αὐτοῖσιν, ὥστε τῶν τοιούτων ἁμαρτιῶν τὰς ζημίας τοὺς ὀλίγα κεκτημένους φέρειν μᾶλλον ἢ τοὺς πλουσίους. ἀλλὰ γάρ, ὥσπερ καὶ πρότερον ἔλεξα, θεῖα μὲν καὶ ταῦτά ἐστίν ὁμοίως τοῖς ἄλλοις· γίνεται δὲ κατὰ φύσιν ἕκαστα. καὶ ἡ τοιαύτη νοῦσος ἀπὸ τοιαύτης 128

cut which causes impotence, and I believe that these are the veins which they cut. After this treatment, when the Scythians approach a woman but cannot have intercourse, at first they take no notice and think no more about it. But when two, three or even more attempts are attended with no better success, thinking that they have sinned against Heaven they attribute thereto the cause, and put on women's clothes, holding that they have lost their manhood. So they play the woman, and with the women do the same work as women do.

This affliction affects the rich Scythians because of their riding, not the lower classes but the upper, who possess the most strength; the poor, who do not ride, suffer less. But, if we suppose this disease to be more divine than any other, it ought to have attacked, not the highest and richest classes only of the Scythians, but all classes equally—or rather the poor especially, if indeed the gods are pleased to receive from men respect and worship, and repay these with favours. For naturally the rich, having great wealth, make many sacrifices to the gods, and offer many votive offerings, and honour them, all of which things the poor, owing to their poverty, are less able to do; besides, they blame the gods for not giving them wealth, so that the penalties for such sins are likely to be paid by the poor rather than by the rich. But the truth is, as I said above, these afflictions are neither more nor less divine than any others, and all and each are natural. Such a disease arises

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<sup>1</sup> οἱ πλούσιοι, Cobet (*Mnemosyne* IX. 70) would delete these words.

<sup>2</sup> εἰ δὲ τιμώμενοι Coray: οὐ τιμωμένοισιν ἤδη εἰ MSS.

προφάσιος τοῖς Σκύθησι γίνεται οἷν εἶρηκα. ἔχει δὲ καὶ κατὰ τοὺς λοιποὺς ἀνθρώπους ὁμοίως. ὅκου γὰρ ἱππάζονται μάλιστα καὶ πυκνότατα,  
 60 ἐκεῖ πλείστοι ὑπὸ κεδμάτων καὶ ἰσχυάδων καὶ ποδαγριῶν ἀλίσκονται καὶ λαγνεύειν κάκιστοὶ εἰσι. ταῦτα δὲ τοῖσι Σκύθησι πρόσεστι, καὶ εὐνουχοιδέστατοί εἰσιν ἀνθρώπων διὰ ταύτας τε<sup>1</sup> τὰς προφάσις καὶ ὅτι ἀναξυρίδας ἔχουσιν αἰεὶ καὶ εἰσιν ἐπὶ τῶν ἵππων τὸ πλείστον τοῦ χρόνου, ὥστε μήτε χειρὶ ἄπτεσθαι τοῦ αἰδοίου, ὑπὸ τε τοῦ ψύχεος καὶ τοῦ κόπου ἐπιλήθεσθαι τοῦ ἡμέρου καὶ τῆς μείξις, καὶ μηδὲν παρακινεῖν  
 69 πρότερον ἢ ἀνανδρωθῆναι.<sup>2</sup>

XXIII. Περὶ μὲν οὖν τῶν Σκυθέων οὕτως ἔχει τοῦ γένους. τὸ δὲ λοιπὸν γένος τὸ ἐν τῇ Εὐρώπῃ διάφορον αὐτὸ ἐν τῷ ἐστὶ καὶ κατὰ τὸ μέγεθος καὶ κατὰ τὰς μορφὰς διὰ τὰς μεταλλάγας τῶν ὥρέων, ὅτι μεγάλαι γίνονται καὶ πυκναί, καὶ θάλπεά τε ἰσχυρά καὶ χειμῶνες καρτεροὶ καὶ ὄμβροι πολλοὶ καὶ αὐτὶς αὐχμοὶ πολυχρόνιοι καὶ πνεύματα, ἐξ ὧν μεταβολαὶ πολλαὶ καὶ παντοδαπαί. ἀπὸ τούτων εἰκὸς αἰσθάνεσθαι<sup>3</sup> καὶ τὴν  
 10 γένεσιν ἐν τῇ συμπήξει τοῦ γόνου ἄλλοτε<sup>4</sup> ἄλλην καὶ μὴ τῷ αὐτῷ τὴν αὐτὴν γίνεσθαι ἐν τε τῷ θέρει καὶ τῷ χειμῶνι μηδὲ ἐν ἐπομβρίῃ καὶ αὐχμῷ. διότι τὰ εἶδεα διηλλάχθαι νομίζω τῶν Εὐρωπαϊῶν μᾶλλον ἢ τῶν Ἀσινηῶν καὶ τὰ μεγέθεα διαφορώτατα αὐτὰ ἐν τοῖς εἶναι κατὰ πόλιν ἐκάστην. αἱ γὰρ φθοραὶ πλείονες ἐγγίνονται τοῦ γόνου ἐν τῇ συμπήξει ἐν τῇσι μεταλλαγῇσι τῶν ὥρέων πυκνῇ-

<sup>1</sup> τε added by Wilamowitz.

## AIRS WATERS PLACES, XXII.—XXIII.

among the Scythians for such a reason as I have stated, and other men too are equally liable to it, for wherever men ride very much and very frequently, there the majority are attacked by swellings at the joints, sciatica and gout, and are sexually very weak. These complaints come upon the Scythians, and they are the most impotent of men, for the reasons I have given, and also because they always wear trousers and spend most of their time on their horses, so that they do not handle the parts, but owing to cold and fatigue forget about sexual passion, losing their virility before any impulse is felt.

XXIII. Such is the condition of the Scythians. The other people of Europe differ from one another both in stature and in shape, because of the changes of the seasons, which are violent and frequent, while there are severe heat waves, severe winters, copious rains and then long droughts, and winds, causing many changes of various kinds. Wherefore it is natural to realize that generation too varies in the coagulation of the seed,<sup>1</sup> and is not the same for the same seed in summer as in winter nor in rain as in drought. It is for this reason, I think, that the physique of Europeans varies more than that of Asiatics, and that their stature differs very widely in each city. For there arise more corruptions in the coagulation of the seed when the changes of the sea-

<sup>1</sup> *I. e.* "in the formation of the foetus."

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<sup>2</sup> Coray, with at least one MS., would read ἀνδρωθῆναι, that is, "attempt no sexual act before they recover their virility."

<sup>3</sup> αἰσθάνεσθαι Kühlewein would delete, as interpolated from Chapter X: συνίστασθαι Wilamowitz.

<sup>4</sup> ἄλλοτε added (with καὶ preceding) by Coray.



- σιν εούσησιν ἢ ἐν τῇσι παραπλησίησι καὶ  
 ὁμοίησι. περὶ τε τῶν ἡθέων ὁ αὐτὸς λόγος· τό  
 20 τε ἄγριον καὶ τὸ ἄμεικτον καὶ τὸ θυμοειδὲς ἐν  
 τῇ τοιαύτῃ φύσει ἐγγίνεται. αἱ γὰρ ἐκπληξίαι  
 πυκναὶ γινόμεναι τῆς γνώμης τὴν ἀγριότητα ἐντιθέ-  
 ασι, τὸ δὲ ἡμερόν τε καὶ ἡπιον ἀμαυροῦσι. διὸ  
 καὶ εὐψυχοτέρους νομίζω τοὺς τὴν Εὐρώπην  
 οἰκέοντας εἶναι ἢ τοὺς τὴν Ἀσίην. ἐν μὲν γὰρ  
 τῷ αἰεὶ παραπλησίῳ αἱ ῥαθυμίαι ἔνεισιν, ἐν δὲ  
 τῷ μεταβαλλομένῳ αἱ ταλαιπωρίαι τῷ σώματι  
 καὶ τῇ ψυχῇ. καὶ ἀπὸ μὲν ἡσυχίης καὶ ῥαθυ-  
 μίης ἡ δειλίη αὖξεται, ἀπὸ δὲ τῆς ταλαιπωρίας  
 30 καὶ τῶν πόνων αἱ ἀνδρείαι. διὰ τοῦτό εἰσι  
 μαχιμώτεροι οἱ τὴν Εὐρώπην οἰκέοντες καὶ διὰ  
 τοὺς νόμους, ὅτι οὐ βασιλεύονται ὥσπερ οἱ Ἀσιη-  
 νοί. ὅκου γὰρ βασιλεύονται, ἐκεῖ ἀνάγκη δειλο-  
 τάτους εἶναι. εἴρηται δέ μοι καὶ πρότερον. αἱ  
 γὰρ ψυχαὶ δεδούλωνται καὶ οὐ βούλονται παρα-  
 κινδυνεύειν ἐκόντες εἰκῇ ὑπὲρ ἀλλοτρίης δυνάμιος.  
 ὅσοι δὲ αὐτόνομοι—ὑπὲρ ἑωυτῶν γὰρ τοὺς κιν-  
 δύνους αἰρεῦνται καὶ οὐκ ἄλλων—προθυμεῦνται  
 ἐκόντες καὶ ἐς τὸ δεινὸν ἔρχονται. τὰ γὰρ ἀριστεῖα  
 40 τῆς νίκης αὐτοὶ φέρονται. οὕτως οἱ νόμοι οὐχ  
 41 ἥκιστα τὴν εὐψυχίην ἐργάζονται.

XXIV. Τὸ μὲν οὖν ὅλον καὶ τὸ ἅπαν οὕτως  
 ἔχει περὶ τε τῆς Εὐρώπης καὶ τῆς Ἀσίας. ἔνεισι  
 δὲ καὶ ἐν τῇ Εὐρώπῃ φύλα διάφορα ἕτερα ἑτέροισι  
 καὶ τὰ μεγέθεα καὶ τὰς μορφὰς καὶ τὰς ἀνδρείας.  
 τὰ δὲ διαλλάσσοντα ταυτά<sup>1</sup> ἐστίν, ἃ καὶ ἐπὶ τῶν  
 πρότερον εἴρηται. ἔτι δὲ σαφέστερον φράσω.  
 ὁκόσοι μὲν χώρην ὀρεινὴν τε οἰκεύουσι καὶ τρηχεῖαν  
 καὶ ὑψηλὴν καὶ ἐνυδρον, καὶ αἱ μεταβολαὶ αὐτοῖσι

sons are frequent than when they are similar or alike. The same reasoning applies also to character. In such a climate arise wildness, unsociability and spirit. For the frequent shocks to the mind impart wildness, destroying tameness and gentleness. For this reason, I think, Europeans are also more courageous than Asiatics. For uniformity engenders slackness, while variation fosters endurance in both body and soul; rest and slackness are food for cowardice, endurance and exertion for bravery. Wherefore Europeans are more warlike, and also because of their institutions, not being under kings as are Asiatics. For, as I said above, where there are kings, there must be the greatest cowards. For men's souls are enslaved, and refuse to run risks readily and recklessly to increase the power of somebody else. But independent people, taking risks on their own behalf and not on behalf of others, are willing and eager to go into danger, for they themselves enjoy the prize of victory. So institutions contribute a great deal to the formation of courageousness.

XXIV. Such, in outline and in general, is the character of Europe and of Asia. In Europe too there are tribes differing one from another in stature, in shape and in courage. The differences are due to the same causes as I mentioned above, which I will now describe more clearly. Inhabitants of a region which is mountainous, rugged, high, and watered,

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<sup>1</sup> ταῦτά Coray : ταῦτά B : ταῦτ' V.

- γίνονται τῶν ὥρέων μέγα διάφοροι, ἐνταῦθα εἰκὸς  
 10 εἶδεα μεγάλα εἶναι καὶ πρὸς τὸ ταλαίπωρον καὶ  
 τὸ ἀνδρεῖον εὖ πεφυκότα, καὶ τό τε ἄγριον καὶ τὸ  
 θηριῶδες αἱ τοιαῦται φύσεις οὐχ ἥκιστα ἔχουσιν.  
 ὁκόσοι δὲ κοῖλα χωρία καὶ λειμακώδεα καὶ πνιγερὰ  
 καὶ τῶν θερμῶν πνευμάτων πλέον μέρος μετέχουσιν  
 ἢ τῶν ψυχρῶν ὕδασι τε χρέονται θερμοῖσιν, οὗτοι  
 δὲ μεγάλοι μὲν οὐκ ἂν εἴησαν οὐδὲ κανονίαι, ἐς  
 εὖρος δὲ πεφυκότες καὶ σαρκώδεις καὶ μελανό-  
 τριχες, καὶ αὐτοὶ μέλανεσ μᾶλλον ἢ λευκότεροι,  
 φλεγματίαι δὲ ἦσσαν ἢ χολώδεις· τὸ δὲ ἀνδρεῖον  
 20 καὶ τὸ ταλαίπωρον ἐν τῇ ψυχῇ φύσει μὲν οὐκ ἂν  
 ὁμοίως ἐνείη, νόμος δὲ προσγενόμενος ἀπεργάζοιτ'  
 ἂν. καὶ εἰ μὲν ποταμοὶ ἐνείησαν ἐν τῇ χώρῃ,  
 οἵτινες ἐκ τῆς χώρας ἐξοχετεύουσι τό τε στάσιμον  
 καὶ τὸ ὄμβριον, οὗτοι ἂν ὑγιεροὶ τε εἴησαν καὶ  
 λαμπροί. εἰ μέντοι ποταμοὶ μὲν μὴ εἴησαν, τὰ  
 δὲ ὕδατα λιμναῖά<sup>1</sup> τε καὶ στάσιμα πίνοιεν καὶ  
 ἐλώδεα, ἀνάγκη τὰ τοιαῦτα εἶδεα προγαστρότερα  
 καὶ σπληνώδεα εἶναι. ὁκόσοι δὲ ὑψηλὴν τε οἰκέ-  
 30 ουσιν χώραν καὶ λείην καὶ ἀνεμώδεα καὶ ἔνυδρον,  
 εἶεν ἂν εἶδεα μεγάλοι καὶ ἐωντοῖσι παραπλήσιοι·  
 ἀνανδρότεροι δὲ καὶ ἡμερώτεροι αἱ γινώμαι.  
 ὁκόσοι δὲ λεπτά τε καὶ ἄνυδρα καὶ ψιλὰ, τῇσι  
 μεταβολῇσι τῶν ὥρέων οὐκ εὖκρητα, ἐν ταύτῃ τῇ  
 χώρῃ τὰ εἶδεα εἰκὸς σκληρά τε εἶναι καὶ ἔντονα  
 καὶ ξανθότερα ἢ μελάντερα καὶ τὰ ἥθεα καὶ τὰς  
 ὀργὰς αὐθάδεάς τε καὶ ἰδιογνώμονας. ὅκον γὰρ  
 αἱ μεταβολαὶ εἰσι πυκνόταται τῶν ὥρέων καὶ  
 πλείστον διάφοροι αὐταὶ ἐωντῇσιν, ἐκεῖ καὶ τὰ  
 εἶδεα καὶ τὰ ἥθεα καὶ τὰς φύσεως εὐρήσεις  
 40 πλείστον διαφερούσας.

where the changes of the seasons exhibit sharp contrasts, are likely to be of big physique, with a nature well adapted for endurance and courage, and such possess not a little wildness and ferocity. The inhabitants of hollow regions, that are meadowy, stifling, with more hot than cool winds, and where the water used is hot, will be neither tall nor well-made, but inclined to be broad, fleshy, and dark-haired; they themselves are dark rather than fair, less subject to phlegm than to bile. Similar bravery and endurance are not by nature part of their character, but the imposition of law can produce them artificially. Should there be rivers in the land, which drain off from the ground the stagnant water and the rain water, these <sup>1</sup> will be healthy and bright. But if there be no rivers, and the water that the people drink be marshy, stagnant, and fenny, the physique of the people must show protruding bellies and enlarged spleens. Such as dwell in a high land that is level, windy, and watered, will be tall in physique and similar to one another, but rather unmanly and tame in character. As to those that dwell on thin, dry, and bare soil, and where the changes of the seasons exhibit sharp contrasts, it is likely that in such country the people will be hard in physique and well-braced, fair rather than dark, stubborn and independent in character and in temper. For where the changes of the seasons are most frequent and most sharply contrasted, there you will find the greatest diversity in physique, in character, and in constitution.

<sup>1</sup> The people or the rivers? Probably the former, in which case "bright" will mean "of bright (clear) complexion."

<sup>1</sup> λιμναῖα B: κρηναῖα all other MSS.

Μέγισται μὲν οὖν εἰσιν αὐται τῆς φύσιος αἱ  
 διαλλαγαί, ἔπειτα δὲ καὶ ἡ χώρα, ἐν ᾗ ἂν τις  
 τρέφηται καὶ τὰ ὕδατα. εὐρήσεις γὰρ ἐπὶ τὸ  
 πλήθος τῆς χώρας τῇ φύσει ἀκολουθέοντα καὶ τὰ  
 εἶδεα τῶν ἀνθρώπων καὶ τοὺς τρόπους. ὅκου  
 μὲν γὰρ ἡ γῆ πίειρα καὶ μαλθακὴ καὶ ἔνυδρος, καὶ  
 τὰ ὕδατα κάρτα μετέωρα, ὥστε θερμὰ εἶναι τοῦ  
 θέρεος καὶ τοῦ χειμῶνος ψυχρά, καὶ τῶν ὥρέων  
 καλῶς κεῖται, ἐνταῦθα καὶ οἱ ἄνθρωποι σαρκώδεες  
 50 εἰσι καὶ ἄναρθροι καὶ ὑγροὶ καὶ ἀταλαίπωροι καὶ  
 τὴν ψυχὴν κακοὶ ὥς ἐπὶ τὸ πολὺ. τό τε ῥάθυμον  
 καὶ τὸ ὑπνηρὸν ἔνεστιν ἐν αὐτοῖς ἰδεῖν· ἔς τε τὰς  
 τέχνας παχείες καὶ οὐ λεπτοὶ οὐδ' ὀξέες. ὅκου δ'  
 ἐστὶν ἡ χώρα ψιλὴ τε καὶ ἄνυδρος<sup>1</sup> καὶ τρηχεῖα  
 καὶ ὑπὸ τοῦ χειμῶνος πιεζομένη καὶ ὑπὸ τοῦ  
 ἡλίου κεκαυμένη, ἐνταῦθα δὲ σκληροὺς τε καὶ  
 ἰσχυροὺς καὶ διηρθρωμένους καὶ ἐντόνους καὶ  
 δασέας ἰδοις.<sup>2</sup> τό τε ἐργατικὸν ἐνεὸν<sup>3</sup> ἐν τῇ φύσει  
 τῇ τοιαύτῃ καὶ τὸ ἄγρυπνον, τά τε ἥθεα καὶ τὰς  
 60 ὀργὰς αὐθάδεας καὶ ἰδιογνώμονας, τοῦ τε ἀγρίου  
 μᾶλλον μετέχοντας ἢ τοῦ ἡμέρου, ἔς τε τὰς τέχνας  
 ὀξυτέρους τε καὶ συνετωτέρους καὶ τὰ πολέμια  
 ἀμείνους εὐρήσεις· καὶ τᾶλλα τὰ ἐν τῇ γῇ φυόμενα  
 πάντα ἀκόλουθα ἐόντα τῇ γῇ. αἱ μὲν ἐναντιώταται  
 φύσιές τε καὶ ιδέαι ἔχουσιν οὕτως. ἀπὸ δὲ  
 67 οὐχ ἀμαρτήσης.

## AIRS WATERS PLACES, xxiv.

These are the most important factors that create differences in men's constitutions ; next come the land in which a man is reared, and the water. For in general you will find assimilated to the nature of the land both the physique and the characteristics of the inhabitants. For where the land is rich, soft, and well-watered, and the water is very near the surface, so as to be hot in summer and cold in winter, and if the situation be favourable as regards the seasons, there the inhabitants are fleshy, ill-articulated, moist, lazy, and generally cowardly in character. Slackness and sleepiness can be observed in them, and as far as the arts are concerned they are thick-witted, and neither subtle nor sharp. But where the land is bare, waterless, rough, oppressed by winter's storms and burnt by the sun, there you will see men who are hard, lean, well-articulated, well-braced, and hairy ; such natures will be found energetic, vigilant, stubborn and independent in character and in temper, wild rather than tame, of more than average sharpness and intelligence in the arts, and in war of more than average courage. The things also that grow in the earth all assimilate themselves to the earth. Such are the most sharply contrasted natures and physiques. Take these observations as a standard when drawing all other conclusions, and you will make no mistake.

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<sup>1</sup> *ἄνυδρος* Ermerins from *inaquosa* of 7027 : *ἀνώχυρος* MSS.

<sup>2</sup> *ἴδους* b, omitted by most MSS. : *ἴδους* *ἀν* Coray.

<sup>3</sup> Before *ἐνεδν* all MSS. except *JB* add *ὀξύ*.

